

資料 熱収支・水収支観測資料 : 2005年

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熱収支・水収支観測資料 - 2005 年 -

Observational Data of Heat Balance and Water Balance
- 2005 -

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I はじめに

この「熱収支・水収支観測資料」は、筑波大学陸域環境研究センター(TERC)の直径160mを有する実験圃場でルーチン観測を行っている熱収支・水収支関係要素の、2005年における観測値を研究資料として整理したものである。TERC圃場におけるルーチン観測は、1981年8月以降24年余にわたる長期データが蓄積された事を受けて、新たに全期間で一貫したクオリティコントロールを施したデータ(Ver. 2.0データ)を作成した(渡来ほか, 2006)。本資料で用いられたデータは、Ver. 2.0データの日平均値および日積算値である。ただし、風向に関しては月別風向別頻度を掲載した。

測定に用いられる機器は、年一回の保守・点検を行い、測器の精度を保つようにしている。2005年は3月22日に行った。また、10月15~16日は停電のため、日中は予備電源へつなぎかえて観測を行った。

1993年以降、圃場内は年1回冬季のみに草刈りを行ってきたが、夏季から秋季の草丈が年々高くなり、圃場内の地上観測に支障が出始めたた

め、夏季、冬季の年2回草刈りを実施することとなった。2005年は7月20~22日と11月19~22日に行われた。

II 観測要素および観測測器の説明

1. 風向 : Wind Direction

観測用鉄塔の高度29.5m南東側に設置されている超音波風速温度計によって測定されている。値は、正時の10分間平均値である。

渡来ほか(2006)で述べられているように、2005年の風向データにはバイアスが見られた。そこで、渡来ほか(2006)と同様に-39.31度の補正値を加えて風向の値とした。

2. 風速 : Wind Speed

観測用鉄塔に取り付けた超音波風速温度計によって得られた水平風速の日平均値である。測定高度は地表面から1.6mおよび29.5m、単位はm/sである。

1997年8月1日以降、高度29.5mでは、超音波風速温度計が観測用鉄塔の南東及び北西側に設置してある。このため、本資料においても昨年

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と同様に、29.5m の値として、日平均風向が 33–213 度のときは南東側の値を、0–33 度及び 213–360 度のときは北西側の値を採用した。また、風向が欠測の場合は、南東側と北西側の平均値とした。

また、1997 年から主風向の成分として北成分が強くなる秋に高度 1.6 m の南東側のものを北西側に、逆に南成分が強くなる春に北西側のものを南東側に付けかえる作業を行っている。2005 年は、4 月 6 日に北西のもの（高度 1.6m）を南東に移動させ、12 月 22 日に南東のものを北西に移動させた。なお、2004 年までは草丈の生長にともなって、夏場に 1.6 m のものを 2.15 m に持ち上げる作業を行っていたが、2005 年は夏季にも草刈りを行ったため、持ち上げ作業は行わなかった。

3. 運動量フラックス : Momentum Flux

超音波風速温度計によって測定された水平風速の変動成分 u' 、垂直風速の変動成分 w' から得られる 2 つの変動量の積の平均 $\overline{u'w'}$ の日平均値である。上向きを正としており、単位は $\times 0.1\text{m}^2/\text{s}^2$ である。測定高度は地表面から 1.6 m および 29.5 m である。1 時間平均値に 1 つでも欠測あるいは異常が見られる場合にはその日の日平均値を欠測とした。詳しくは齊藤・浅沼（2004）を参照されたい。

高度 1.6 m および 29.5 m での観測の詳細は、2 に記述したものと同様である。

4. 顕熱フラックス : Sensible Heat Flux

超音波風速温度計によって測定された鉛直風速および気温の変動量の積の平均 $\overline{w'T'}$ の日平均値である。上向きを正としており単位は $\times 0.1^\circ\text{C} \cdot \text{m}/\text{s}$ である。測定高度および欠測処理は運動量フラックスと同様である。詳しくは齊藤・浅沼（2004）を参照されたい。

高度 1.6 m および 29.5 m での観測の詳細は、2

に記述したものと同様である。

5. 全天短波放射量 : Total Short-wave Radiation

熱電対式全天日射計を地表面から高度 1.5 m に設置して測定した値の日平均値である。単位は W/m^2 である。

6. 正味放射量 : Net Radiation

通風型熱電対式放射収支計を地表面から高度 1.5 m に設置して測定した値の日平均値である。単位は W/m^2 である。

7. 地中熱流量 : Soil Heat Flux

熱電対式地中熱流板によって得られた日平均値で、測定深度は地表面から 2 cm である。2005 年 3 月 22 日に、新型の熱電対式地中熱流板に交換・移設された。単位は W/m^2 である。

8. 日照時間 : Sunshine Duration

研究棟の屋上に設置した回転式日照計によって得られた日積算値である。2004 年 10 月 17 日以降、日照時間のデータは不良な状態が続いている。本資料では図表の掲載を省略した。

9. 気温 : Air Temperature

観測用鉄塔の北東側に取り付けた通風式白金抵抗温度計によって得られた日平均値である。測定高度は地表面から 1.6 m、12.3 m および 29.5 m、単位は $^\circ\text{C}$ である。

10. 地温 : Soil Temperature

直径 10 mm、長さ 15 cm の防水型白金抵抗温度計によって得られた日平均値である。測定深度は地表面から 2 cm (ST-1)、10 cm (ST-2)、50 cm (ST-3) および 100 cm (ST-4) であり、単位は $^\circ\text{C}$ である。センサーは深度 1 m の穴の側壁に地表面と平行に挿入し、埋土した。2005 年 3 月 22 日に、新たなセンサーに交換・移設された。

11. 地下水位：Ground Water Level

地表面から地下水面までの深さの日平均値で単位は m である。観測には水圧式水位計が使用された。測定深度は、2.2 m 深（GW-1、スクリーン深度は 0.7～2 m）、10.0 m 深（GW-2、同 8～9 m）と新 2.0 m 深（GW-4、同 0.5～2 m）の 3 種類であるが、うち 2.2 m 深（GW-1）は 2005 年 7 月 22 日に運用を停止した。

12. 露点温度：Dew Point Temperature

観測用鉄塔の南西側に取り付けられた塩化リチウム露点温度計によって得られた日平均値である。単位は℃、測定高度は気温と同様である。

13. 降水量：Precipitation

1 転倒 0.5 mm、直径 20 cm の転倒ます型隔測自記雨量計を使用して測定された。単位は mm（水深換算）で、日積算値である。

14. 蒸発散量：Evapotranspiration

直径 2 m、深さ 2 m の円筒型容器に不攪乱の土（関東ローム）を詰めたウェイングライシメータにより測定された。総重量は約 9 トンであり、蒸発あるいは降水による重量変化を ± 250 kg（水深換算約 80 mm）の範囲で測定できる。秤量感度は 100 g（水深換算 0.032 mm）である。単位は mm（水深換算）で、日積算値である。降水日には雨量計で測定された日降水量をライシメータの生の測定値に加えた値を真の日蒸発散量とした。ただし、その結果が -0.5 より小さい時は欠測、-0.5～0 の場合は雨量計の測定誤差を考慮して 0.0 とした。さらに、何らかの理由でウェイングライシメータの雨量測定値が雨量計のそれより小さい場合があると日蒸発散量が過大評価されてしまうので、そのような時には蒸発散量を欠測としてある。観測期間中欠測日が少なからず存在するが、これは降水後の強制排水前後における乱れや、点検・調整などが主な原因である。田・杉田

（1996）の記述のとおり、ライシメータの秤の感度の問題でデータの信頼性には若干の問題が残されていた。データの平均化処理を行うコントローラ（MUC-175SZ：ミュー精器株式会社）をライシメータの秤の感度の問題を解決するために 1998 年 8 月 14 日よりコントローラを使用し計測している。現在はコントローラを導入することにより、風の影響は取り除かれるようになった。

しかしながら平均化処理をほどこしたことにより、測器の劣化によるものと考えられる影響が測定値に含まれていることが発覚した。ただし、日ベースのデータとしては信頼できると考えられる。詳細については新村・杉田（1999）を参照されたい。

齊藤・山中（2005）はセンター圃場のライシメータで観測された蒸発散量の長期解析を行い、降水直後のデータに水漏れの影響と思われる過大評価傾向が現われていることなどを指摘した。本資料で用いたデータでは、この過大評価に関する補正も行った。詳しくは渡来ほか（2006）を参照されたい。

15. 気圧：Atmospheric Pressure

観測用鉄塔直下の計測ボックス内に設置された気圧計（PTB210：ヴァイサラ株式会社）において測定された。単位は hPa である。

III おわりに

本資料は 1980 年に出版した「熱収支・水収支観測資料（1）」（1977 年 8 月 - 1979 年 3 月）、1988 年に出版した「熱収支・水収支観測資料（2） - 熱収支編 -」（1981 年 7 月 - 1987 年 12 月）、1989 年に出版した「熱収支・水収支観測資料（3） - 水収支編 -」（1981 年 8 月 - 1987 年 12 月）、に続いて 1 年ごとにまとめられ（渡来・山中、2005 など）、水理実験センター報告及び陸域環境研究センター報告に掲載されている「熱収支・水収支

観測資料」の2005年分のものである。

これらの観測値のさらに高度な利用を望まれる研究者に対しては、1時間平均値あるいは積算値が、陸域環境研究センターのホームページ (<http://www.suiri.tsukuba.ac.jp/>) の熱収支・水収支観測圃場日報データベース (<http://www.suiri.tsukuba.ac.jp/hojyo/database.html>) に保管されている。また2003年5月1日以降は、10秒平均値及び30分平均値データも保管してある。データの集録・処理方法については浅沼ほか(2004)を参照されたい。

さらに、2003年4月以前の気象日報(原簿)および自記打点記録紙などの保管されている原資料の利用も可能である。2003年以前のデータの集録・処理方法については鳥谷ほか(1989)を、1987年以前のデータの集録・処理方法については古藤田ほか(1983)を参照されたい。

TERC 圃場における24年余にわたるルーチン観測データは、Ver. 2.0 データという形でクオリティコントロールがなされ、「TERC 熱収支・水収支観測データベース図表集」としてまとめられた(渡来ほか, 2006)。Ver. 2.0 データは今後、陸域環境研究センターのホームページ上で公開される予定である。

謝辞

陸域環境研究センター研究支援推進員の吉田瑞穂さんには、データのクオリティチェックと作図・作表に協力頂いた。本資料の全ての図は、The Generic Mapping Tools (Wessel and Smith, 1991) を用いて作成されたものである。

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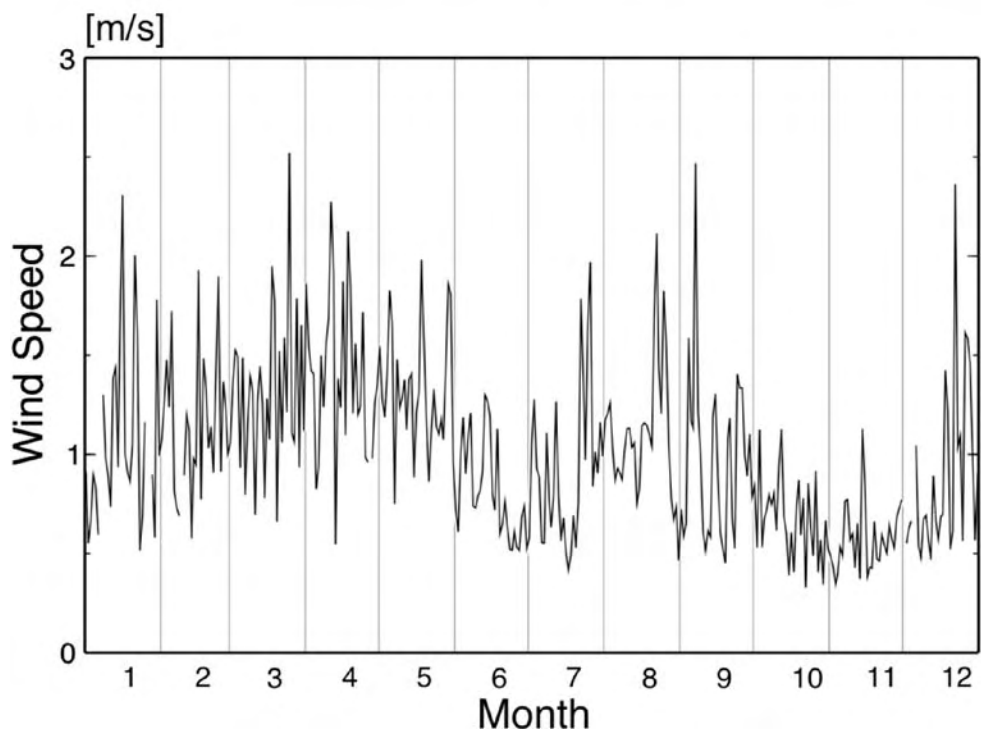
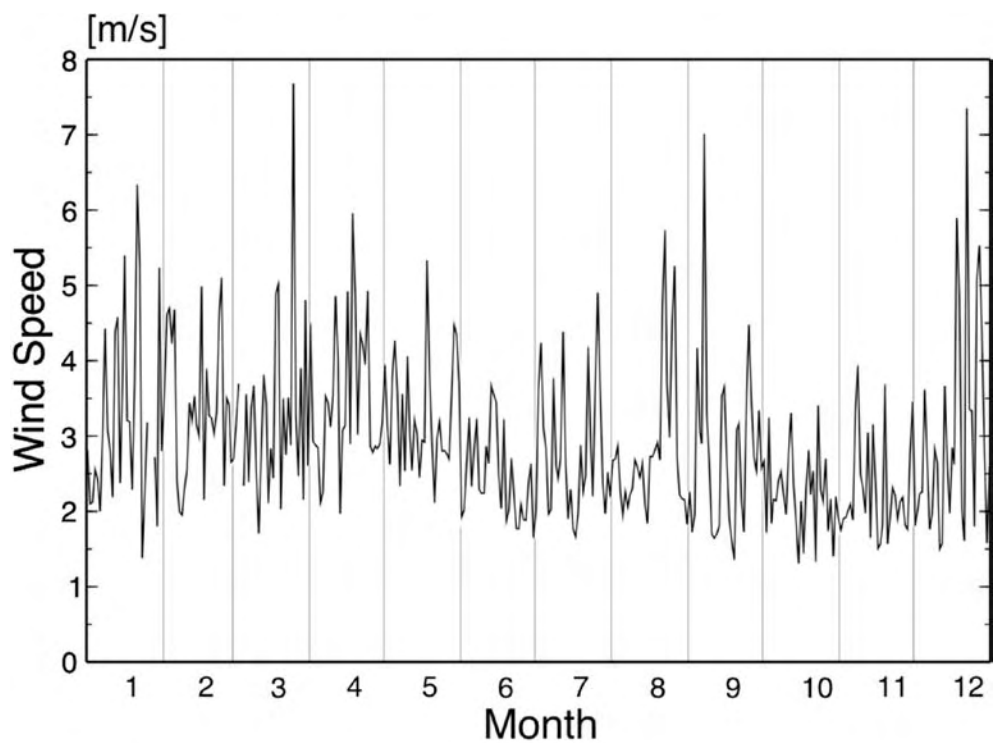
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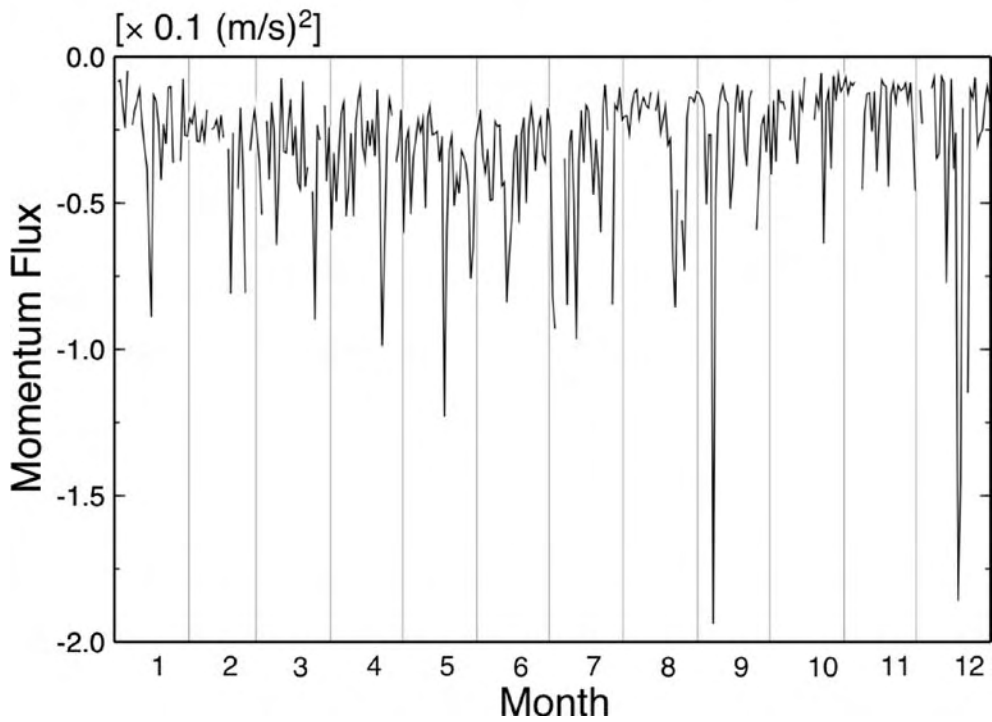
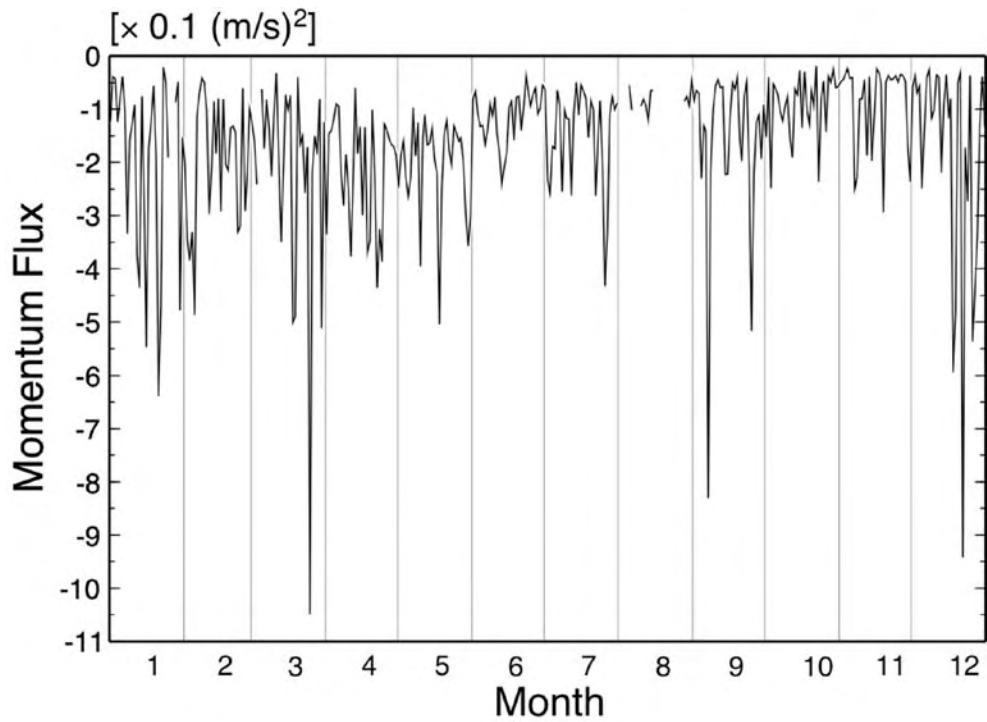
気象・水文表

表の見方

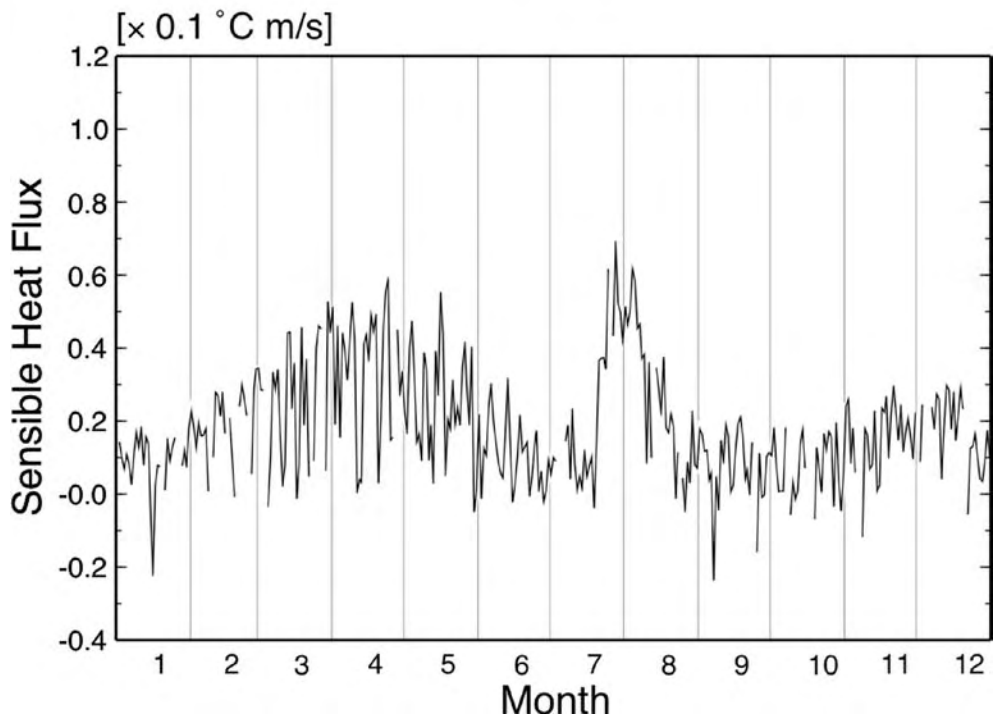
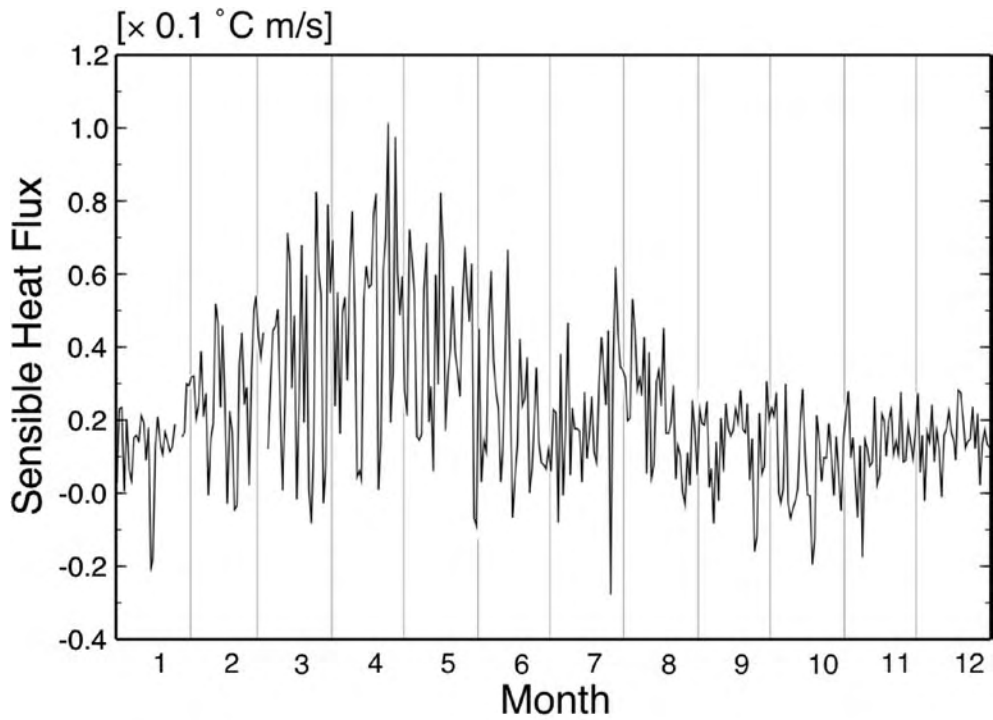
- (1) ITEM は観測要素, INSTRUMENT は観測測器を示す.
- (2) UNIT に関して, MONTHLY FREQUENCY は月毎の頻度を示す.
- (3) 表の横軸は月, 縦軸は日である.
- (4) 表中の *** は欠測を, …は対応する日がないことを示す.
- (5) NO DATA は欠測頻度を示す.
- (6) MEAN は月平均値, TOTAL は月積算値を示す.



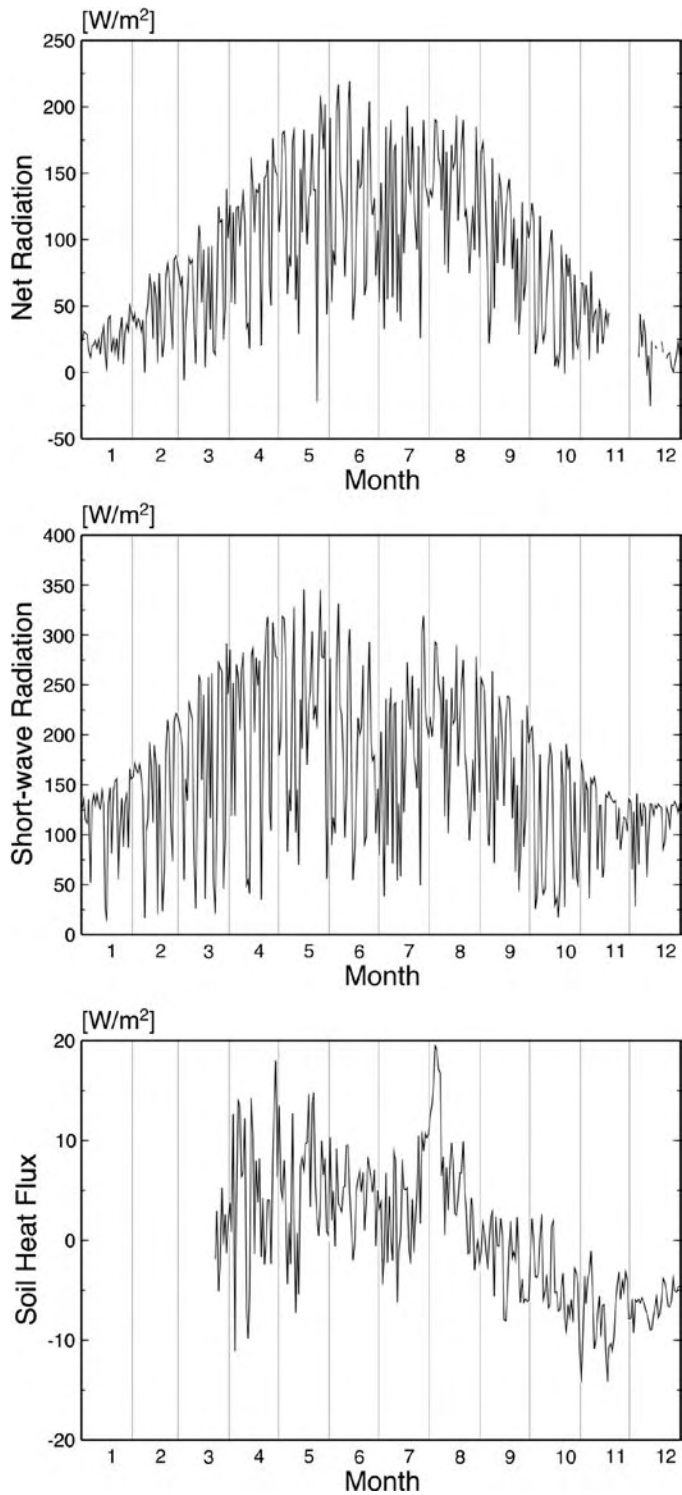
第1図 測定高度 29.5 m (上図), および 1.6 m (下図) における風速の日平均値の季節変化



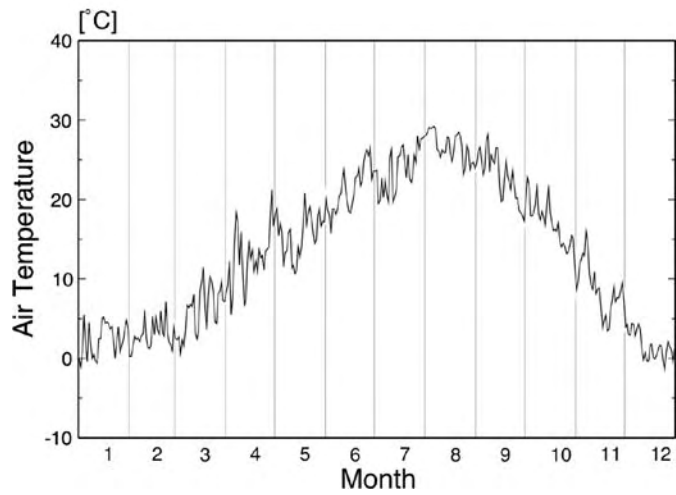
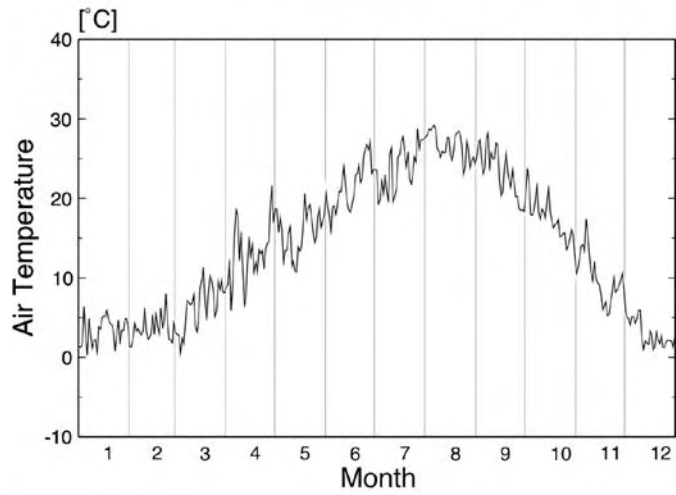
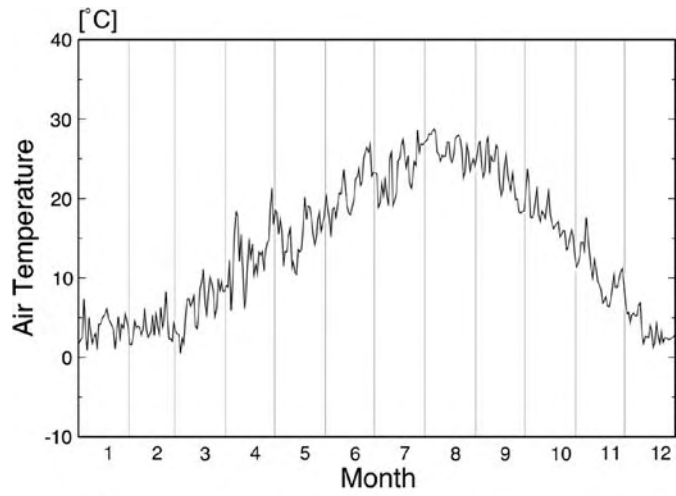
第2図 測定高度 29.5 m (上図), および 1.6 m (下図) における運動量フラックスの日平均値の季節変化



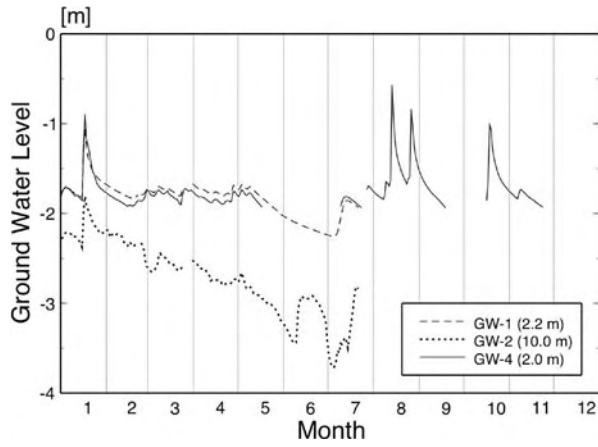
第3図 測定高度 29.5 m (上図), および 1.6 m (下図) における顕熱フラックスの日平均値の季節変化



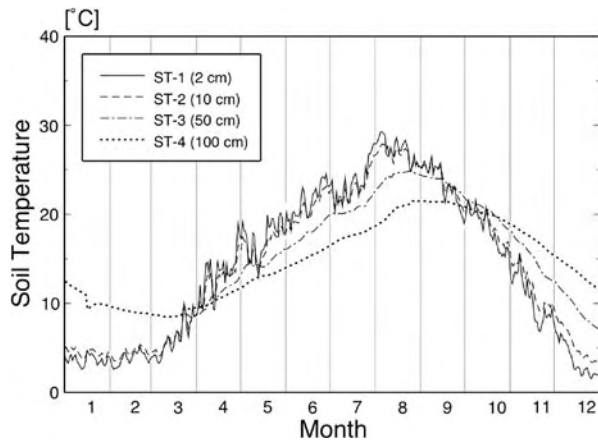
第4図 正味放射量（上図），全天短波放射量（中図），および地中熱流量（下図）の日平均値の季節変化



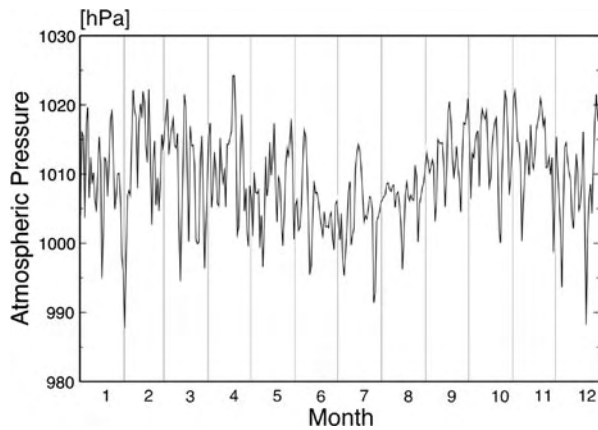
第5図 測定高度 29.5 m (上図), 12.3 m (中図), および 1.6 m (下図) における気温の日平均値の季節変化



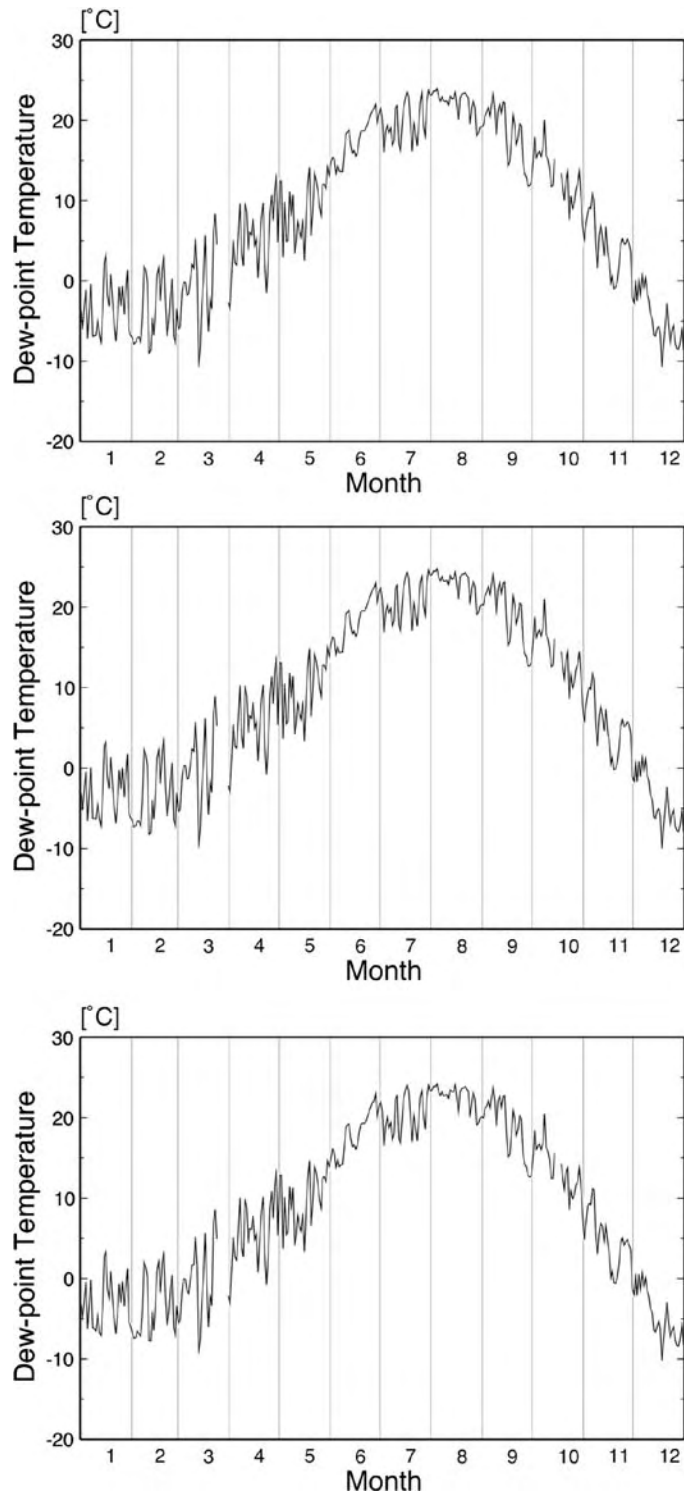
第 6 図 3 深度 (2.2 m, 10 m, 新 2.0 m) の観測井における地下水位の日平均値の季節変化



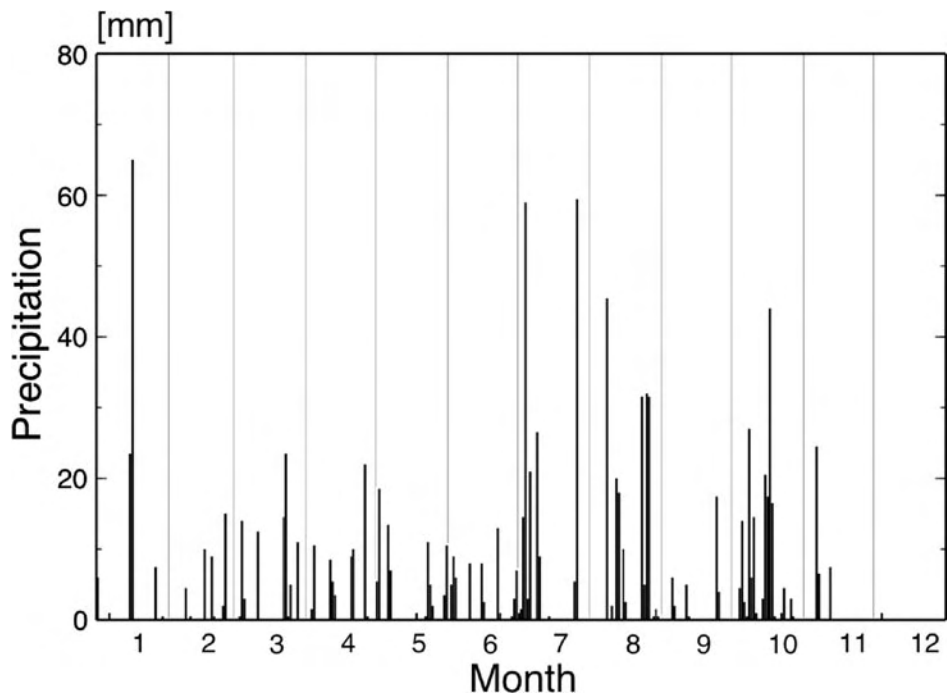
第 7 図 4 深度 (2 cm, 10 cm, 50 cm, 100 cm) における地温の日平均値の季節変化



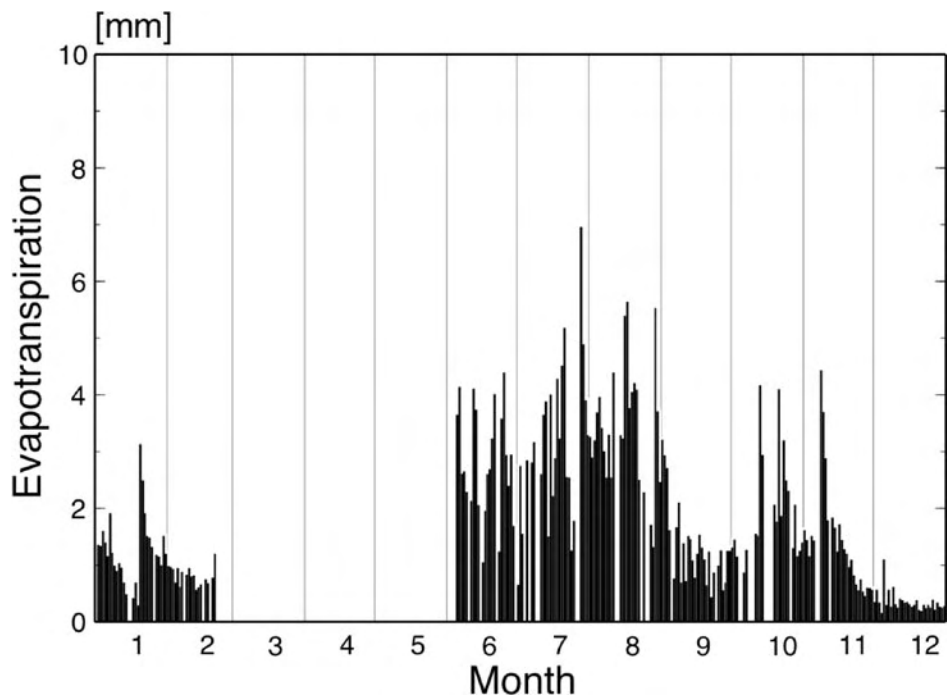
第 8 図 気圧の日平均値の季節変化



第9図 測定高度 29.5 m (上図), 12.3 m (中図), および 1.6 m (下図) における露点温度の日平均値の季節変化



第 10 図 日降水量の季節変化



第 11 図 日蒸発散量の季節変化

ITEM WIND DIRECTION (29.5 m HEIGHT)
 INSTRUMENT SONIC ANEMOMETER-THERMOMETER (DAT-300)
 UNIT MONTHLY FREQUENCY
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| N | 33 | 33 | 21 | 11 | 19 | 12 | 5 | 13 | 24 | 73 | 30 | 19 |
| NNE | 21 | 11 | 12 | 7 | 15 | 11 | 14 | 17 | 37 | 49 | 16 | 12 |
| NE | 17 | 20 | 14 | 35 | 36 | 32 | 18 | 31 | 61 | 73 | 24 | 18 |
| ENE | 28 | 40 | 59 | 79 | 127 | 99 | 88 | 99 | 145 | 127 | 79 | 27 |
| E | 41 | 103 | 95 | 143 | 166 | 168 | 245 | 165 | 153 | 75 | 59 | 29 |
| ESE | 13 | 31 | 51 | 79 | 92 | 104 | 105 | 92 | 51 | 42 | 49 | 28 |
| SE | 7 | 11 | 16 | 32 | 32 | 41 | 36 | 38 | 26 | 19 | 25 | 10 |
| SSE | 4 | 7 | 11 | 18 | 33 | 48 | 22 | 26 | 18 | 17 | 13 | 7 |
| S | 13 | 8 | 22 | 32 | 28 | 59 | 32 | 48 | 21 | 9 | 6 | 7 |
| SSW | 2 | 8 | 28 | 72 | 71 | 67 | 49 | 111 | 49 | 23 | 19 | 27 |
| SW | 9 | 17 | 23 | 40 | 21 | 19 | 35 | 20 | 22 | 12 | 25 | 22 |
| WSW | 20 | 24 | 45 | 23 | 10 | 11 | 14 | 14 | 20 | 11 | 29 | 63 |
| W | 72 | 68 | 57 | 27 | 15 | 14 | 16 | 10 | 15 | 26 | 44 | 101 |
| WNW | 163 | 154 | 119 | 46 | 4 | 14 | 25 | 17 | 14 | 44 | 92 | 172 |
| NW | 178 | 88 | 112 | 52 | 37 | 8 | 28 | 25 | 32 | 67 | 137 | 150 |
| NNW | 91 | 49 | 52 | 23 | 37 | 12 | 11 | 18 | 32 | 76 | 73 | 52 |
| NO DATA | 32 | 0 | 7 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 |

ITEM WIND SPEED (1.6 m HEIGHT)
 INSTRUMENT SONIC ANEMOMETER-THERMOMETER (DAT-300)
 UNIT (m/s)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | 0.9 | 1.1 | 1.1 | 1.9 | 1.5 | 0.7 | 0.6 | 1.2 | 0.7 | 0.8 | 0.5 | *** |
| 2 | 0.6 | 1.3 | 1.4 | 1.5 | 1.3 | 0.6 | 1.1 | 1.2 | 0.6 | 0.5 | 0.4 | 0.6 |
| 3 | 0.7 | 1.5 | 1.5 | 1.4 | 1.2 | 1.0 | 1.3 | 1.3 | 0.7 | 1.1 | 0.3 | 0.6 |
| 4 | 0.9 | 1.2 | 1.5 | 1.4 | 1.4 | 1.2 | 0.9 | 1.0 | 1.6 | 0.5 | 0.4 | 0.7 |
| 5 | 0.8 | 1.7 | 0.9 | 0.8 | 1.8 | 0.9 | 0.9 | 0.9 | 1.2 | 0.7 | 0.5 | *** |
| 6 | 0.6 | 0.8 | 1.5 | 0.9 | 1.7 | 1.1 | 0.6 | 0.9 | 1.1 | 0.7 | 0.5 | 1.0 |
| 7 | *** | 0.7 | 0.8 | 1.5 | 0.7 | 1.2 | 0.6 | 0.9 | 2.5 | 0.8 | 0.8 | 0.5 |
| 8 | 1.3 | 0.7 | 1.2 | 1.2 | 1.5 | 0.7 | 1.1 | 0.9 | 1.2 | 0.7 | 0.8 | 0.5 |
| 9 | 1.0 | *** | 1.4 | 1.6 | 1.2 | 0.7 | 0.8 | 1.0 | 1.0 | 0.8 | 0.6 | 0.7 |
| 10 | 0.9 | 0.9 | 1.3 | 1.7 | 1.3 | 0.8 | 0.6 | 1.1 | 0.6 | 0.6 | 0.6 | 0.7 |
| 11 | 0.7 | 1.2 | 0.7 | 2.3 | 1.4 | 0.8 | 0.8 | 1.1 | 0.5 | 0.9 | 0.4 | 0.6 |
| 12 | 1.4 | 1.1 | 1.3 | 1.9 | 1.1 | 0.9 | 1.3 | 1.0 | 0.6 | 1.1 | 0.7 | 0.5 |
| 13 | 1.4 | 0.6 | 1.4 | 0.5 | 1.4 | 1.3 | 0.8 | 1.1 | 0.6 | 0.7 | 0.4 | 0.9 |
| 14 | 0.9 | 1.0 | 1.3 | 1.4 | 1.4 | 1.3 | 0.6 | 0.8 | 1.2 | 0.6 | 1.1 | 0.7 |
| 15 | 1.8 | 0.9 | 0.8 | 1.2 | 0.9 | 1.2 | 0.7 | 0.8 | 1.3 | 0.4 | 0.8 | 0.6 |
| 16 | 2.3 | 1.9 | 1.3 | 1.9 | 1.2 | 0.8 | 0.5 | 1.1 | 0.9 | 0.6 | 0.4 | 0.7 |
| 17 | 1.0 | 0.8 | 1.1 | 1.1 | 1.3 | 0.7 | 0.4 | 1.2 | 0.6 | 0.4 | 0.4 | 0.7 |
| 18 | 0.9 | 1.5 | 1.9 | 2.1 | 2.0 | 1.1 | 0.5 | 1.1 | 0.5 | 0.7 | 0.4 | 1.4 |
| 19 | 0.9 | 1.3 | 1.8 | 1.9 | 1.6 | 0.6 | 0.7 | 1.1 | 0.5 | 0.9 | 0.7 | 1.2 |
| 20 | 1.1 | 1.0 | 0.7 | 1.2 | 1.2 | 0.7 | 0.5 | 1.0 | 1.1 | 0.6 | 0.5 | 0.5 |
| 21 | 2.0 | 1.1 | 1.5 | 1.6 | 0.9 | 0.8 | 0.8 | 1.7 | 1.2 | 0.8 | 0.5 | 0.6 |
| 22 | 1.6 | 0.9 | 1.1 | 1.2 | 1.1 | 0.6 | 1.8 | 2.1 | 0.7 | 0.3 | 0.6 | 2.4 |
| 23 | 0.5 | 1.4 | 1.6 | 1.2 | 1.3 | 0.5 | 1.4 | 1.4 | 0.5 | 0.9 | 0.5 | 1.0 |
| 24 | 0.7 | 1.9 | 1.2 | 1.7 | 1.1 | 0.5 | 1.0 | 1.2 | 1.4 | 0.6 | 0.5 | 1.1 |
| 25 | 1.2 | 0.9 | 2.5 | 1.0 | 1.1 | 0.6 | 1.7 | 1.8 | 1.3 | 0.5 | 0.6 | 0.6 |
| 26 | *** | 1.4 | 1.1 | 1.0 | 1.2 | 0.5 | 2.0 | 1.6 | 1.3 | 0.9 | 0.6 | 1.6 |
| 27 | *** | 1.2 | 1.1 | *** | 1.1 | 0.5 | 0.8 | 1.0 | 1.0 | 0.4 | 0.5 | 1.6 |
| 28 | 0.9 | 1.0 | 1.8 | 1.0 | 1.4 | 0.7 | 1.0 | 0.8 | 0.9 | 0.6 | 0.7 | 1.5 |
| 29 | 0.6 | ... | 0.9 | 1.3 | 1.9 | 0.7 | 0.9 | 0.7 | 1.1 | 0.3 | 0.7 | 1.0 |
| 30 | 1.8 | ... | 1.7 | 1.3 | 1.8 | 0.5 | 1.2 | 0.7 | 0.8 | 0.7 | 0.8 | 0.6 |
| 31 | 1.0 | ... | 1.1 | ... | 1.0 | ... | 1.0 | 0.5 | ... | 0.5 | ... | 0.9 |
| MEAN | 1.1 | 1.2 | 1.3 | 1.4 | 1.3 | 0.8 | 0.9 | 1.1 | 1.0 | 0.7 | 0.6 | 0.9 |

| ITEM | WIND SPEED (29.5 m HEIGHT) | | | | | | | | | | | |
|------------|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| INSTRUMENT | SONIC ANEMOMETER-THERMOMETER (DAT-300) | | | | | | | | | | | |
| UNIT | (m/s) | | | | | | | | | | | |
| YEAR | 2005 | | | | | | | | | | | |
| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1 | 2.8 | 3.5 | 2.7 | 4.5 | 3.9 | 1.9 | 2.0 | 2.7 | 2.3 | 2.7 | 1.8 | 1.8 |
| 2 | 2.1 | 4.6 | 3.2 | 2.9 | 3.1 | 2.0 | 3.6 | 2.7 | 1.7 | 1.7 | 1.9 | 2.0 |
| 3 | 2.1 | 4.7 | 3.7 | 2.9 | 2.6 | 2.6 | 4.2 | 2.9 | 2.0 | 3.2 | 1.9 | 2.2 |
| 4 | 2.6 | 4.2 | *** | 2.8 | 3.8 | 3.2 | 3.1 | 2.3 | 4.2 | 1.8 | 2.0 | 2.3 |
| 5 | 2.4 | 4.7 | 2.3 | 2.1 | 4.3 | 2.3 | 2.8 | 1.9 | 3.1 | 2.2 | 2.1 | 3.6 |
| 6 | 2.0 | 2.4 | 3.6 | 2.3 | 3.6 | 2.8 | 2.0 | 2.3 | 2.9 | 2.1 | 1.9 | 2.7 |
| 7 | 3.0 | 2.0 | 2.4 | 3.5 | 2.3 | 3.2 | 2.0 | 2.1 | 7.0 | 2.4 | 3.3 | 1.8 |
| 8 | 4.4 | 2.0 | 3.4 | 3.4 | 3.6 | 2.3 | 3.8 | 2.2 | 3.3 | 2.5 | 3.9 | 2.0 |
| 9 | 3.1 | 2.3 | 3.7 | 3.1 | 2.5 | 2.2 | 2.6 | 2.3 | 2.7 | 2.2 | 2.5 | 2.8 |
| 10 | 2.8 | 2.5 | 2.6 | 3.5 | 4.1 | 2.2 | 2.4 | 2.7 | 1.7 | 2.0 | 2.3 | 2.6 |
| 11 | 2.2 | 3.4 | 1.7 | 4.9 | 3.0 | 2.9 | 2.7 | 2.6 | 1.6 | 2.8 | 2.0 | 1.5 |
| 12 | 4.4 | 3.2 | 2.8 | 4.0 | 2.5 | 2.6 | 4.4 | 2.5 | 1.7 | 3.3 | 3.0 | 1.6 |
| 13 | 4.6 | 3.5 | 3.8 | 2.0 | 3.2 | 3.7 | 2.7 | 2.6 | 1.8 | 2.4 | 1.6 | 3.7 |
| 14 | 2.4 | 3.2 | 3.4 | 3.1 | 3.0 | 3.5 | 1.9 | 2.1 | 3.5 | 1.9 | 3.2 | 2.7 |
| 15 | 3.8 | 3.0 | 2.1 | 3.1 | 2.5 | 3.5 | 2.3 | 1.8 | 3.7 | 1.3 | 2.4 | 2.0 |
| 16 | 5.4 | 5.0 | 2.8 | 4.9 | 2.9 | 2.5 | 1.8 | 2.7 | 2.7 | 2.1 | 1.5 | 2.8 |
| 17 | 3.2 | 2.2 | 2.4 | 2.9 | 2.9 | 2.0 | 1.7 | 2.7 | 1.9 | 1.4 | 1.6 | 2.6 |
| 18 | 3.2 | 3.9 | 4.9 | 6.0 | 5.3 | 3.2 | 2.0 | 2.8 | 1.6 | 2.3 | 1.8 | 5.9 |
| 19 | 2.3 | 3.3 | 5.0 | 4.9 | 3.8 | 1.9 | 2.9 | 2.9 | 1.4 | 2.8 | 3.7 | 4.9 |
| 20 | 3.8 | 3.2 | 2.0 | 3.0 | 2.9 | 2.0 | 2.3 | 2.7 | 3.1 | 2.2 | 1.6 | 2.0 |
| 21 | 6.3 | 3.0 | 3.5 | 4.4 | 2.1 | 2.7 | 2.5 | 4.7 | 3.2 | 2.5 | 1.9 | 1.6 |
| 22 | 5.3 | 3.3 | 2.8 | 4.2 | 3.0 | 2.2 | 4.2 | 5.7 | 2.2 | 1.3 | 2.3 | 7.4 |
| 23 | 1.4 | 4.6 | 3.5 | 3.9 | 3.2 | 1.8 | 2.9 | 3.7 | 1.7 | 3.4 | 2.2 | 3.4 |
| 24 | 2.2 | 5.1 | 2.9 | 4.9 | 2.8 | 1.8 | 2.2 | 3.0 | 3.4 | 2.3 | 1.9 | 3.3 |
| 25 | 3.2 | 2.3 | 7.7 | 2.9 | 2.8 | 2.1 | 3.6 | 4.5 | 4.5 | 2.1 | 2.1 | 1.8 |
| 26 | *** | 3.5 | 3.3 | 2.8 | 2.8 | 1.9 | 4.9 | 5.3 | 3.5 | 2.7 | 2.2 | 5.1 |
| 27 | *** | 3.4 | 2.5 | 2.9 | 2.7 | 1.9 | 3.6 | 2.7 | 2.7 | 1.7 | 1.8 | 5.5 |
| 28 | 2.7 | 2.7 | 3.9 | 2.8 | 3.5 | 2.4 | 2.4 | 2.2 | 2.5 | 2.2 | 1.8 | 4.3 |
| 29 | 1.8 | ... | 2.2 | 2.9 | 4.5 | 2.6 | 2.0 | 2.2 | 3.3 | 1.4 | 2.8 | 2.8 |
| 30 | 5.2 | ... | 4.8 | 3.2 | 4.3 | 1.6 | 2.5 | 2.2 | 2.6 | 2.2 | 3.5 | 1.6 |
| 31 | 2.8 | ... | 2.6 | ... | 3.7 | ... | 2.2 | 1.8 | ... | 1.9 | ... | 2.6 |
| MEAN | 3.2 | 3.4 | 3.3 | 3.5 | 3.3 | 2.5 | 2.8 | 2.8 | 2.8 | 2.2 | 2.3 | 3.0 |

| ITEM | MOMENTUM FLUX (1.6 m HEIGHT) | | | | | | | | | | | |
|------------|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| INSTRUMENT | SONIC ANEMOMETER-THERMOMETER (DAT-300) | | | | | | | | | | | |
| UNIT | x 0.1 (m/s) ² | | | | | | | | | | | |
| YEAR | 2005 | | | | | | | | | | | |
| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1 | *** | -0.212 | -0.266 | -0.592 | -0.603 | -0.240 | -0.240 | -0.203 | -0.125 | -0.403 | -0.070 | *** |
| 2 | -0.084 | -0.228 | -0.364 | -0.328 | -0.286 | -0.179 | -0.820 | -0.202 | -0.144 | -0.148 | -0.125 | -0.113 |
| 3 | -0.080 | -0.171 | -0.540 | -0.496 | -0.252 | -0.344 | -0.930 | -0.265 | -0.171 | -0.358 | -0.087 | -0.228 |
| 4 | -0.158 | -0.289 | *** | -0.337 | -0.538 | -0.396 | *** | -0.168 | -0.504 | -0.111 | -0.099 | *** |
| 5 | -0.243 | -0.291 | -0.220 | -0.192 | -0.341 | -0.316 | -0.395 | -0.123 | -0.266 | -0.156 | -0.086 | *** |
| 6 | -0.049 | -0.227 | -0.420 | -0.156 | -0.285 | -0.489 | *** | -0.112 | -0.266 | -0.154 | *** | *** |
| 7 | *** | -0.285 | -0.154 | -0.544 | -0.214 | -0.488 | -0.347 | -0.210 | -1.939 | -0.182 | *** | -0.108 |
| 8 | -0.234 | -0.181 | -0.252 | -0.439 | -0.257 | -0.220 | -0.849 | -0.167 | -0.480 | *** | -0.454 | -0.072 |
| 9 | -0.179 | *** | -0.643 | -0.261 | -0.211 | -0.239 | -0.293 | -0.139 | -0.192 | -0.286 | -0.189 | -0.346 |
| 10 | -0.149 | -0.249 | -0.388 | -0.546 | -0.516 | -0.234 | -0.250 | -0.165 | -0.130 | -0.115 | -0.126 | -0.332 |
| 11 | -0.111 | -0.242 | -0.073 | -0.220 | -0.206 | -0.441 | -0.495 | -0.175 | -0.097 | -0.277 | -0.123 | -0.068 |
| 12 | -0.229 | -0.217 | -0.323 | -0.147 | -0.169 | -0.429 | -0.966 | -0.119 | -0.147 | -0.367 | -0.255 | -0.087 |
| 13 | -0.311 | -0.274 | -0.328 | -0.106 | -0.266 | -0.841 | -0.353 | *** | -0.160 | -0.133 | -0.119 | -0.773 |
| 14 | -0.378 | -0.200 | -0.223 | -0.305 | -0.263 | -0.678 | -0.184 | -0.184 | -0.521 | -0.178 | -0.393 | -0.322 |
| 15 | -0.666 | -0.276 | -0.145 | -0.357 | -0.254 | -0.564 | -0.361 | -0.133 | -0.415 | -0.069 | -0.219 | -0.075 |
| 16 | -0.889 | *** | -0.338 | -0.218 | -0.358 | -0.328 | -0.166 | -0.262 | -0.193 | *** | -0.079 | -0.386 |
| 17 | -0.132 | -0.315 | -0.237 | -0.304 | -0.271 | -0.267 | -0.184 | -0.219 | -0.094 | -0.059 | -0.099 | -0.260 |
| 18 | -0.152 | -0.811 | -0.432 | -0.214 | -1.230 | -0.569 | -0.318 | -0.169 | -0.189 | *** | -0.100 | -1.860 |
| 19 | -0.237 | -0.260 | -0.453 | -0.340 | -0.590 | -0.262 | -0.471 | -0.301 | -0.115 | -0.215 | -0.445 | -1.455 |
| 20 | -0.422 | *** | -0.084 | -0.112 | -0.318 | -0.208 | -0.282 | -0.280 | -0.322 | -0.135 | -0.132 | -0.175 |
| 21 | -0.229 | -0.449 | -0.446 | -0.383 | -0.271 | -0.499 | -0.397 | -0.693 | -0.373 | -0.174 | -0.090 | *** |
| 22 | -0.299 | -0.173 | -0.378 | -0.989 | -0.511 | -0.246 | -0.600 | -0.857 | -0.145 | -0.056 | -0.156 | -1.148 |
| 23 | -0.105 | -0.363 | *** | -0.641 | -0.409 | -0.168 | -0.167 | -0.455 | -0.115 | -0.638 | -0.098 | -0.111 |
| 24 | -0.101 | -0.807 | -0.460 | -0.274 | -0.467 | -0.244 | -0.096 | *** | *** | -0.157 | -0.116 | -0.142 |
| 25 | -0.363 | *** | -0.898 | -0.147 | -0.320 | -0.390 | -0.251 | -0.558 | -0.118 | -0.108 | -0.108 | -0.071 |
| 26 | *** | -0.320 | -0.233 | -0.202 | -0.344 | -0.251 | *** | -0.732 | -0.407 | -0.384 | -0.090 | -0.304 |
| 27 | *** | -0.230 | -0.285 | *** | -0.368 | -0.214 | -0.846 | -0.208 | -0.234 | -0.065 | -0.157 | -0.265 |
| 28 | -0.357 | -0.185 | *** | -0.360 | -0.444 | -0.333 | -0.164 | -0.138 | -0.206 | -0.150 | -0.088 | -0.252 |
| 29 | -0.075 | ... | -0.167 | -0.298 | -0.759 | -0.362 | -0.182 | -0.140 | -0.326 | -0.062 | -0.227 | -0.158 |
| 30 | -0.268 | ... | -0.425 | -0.182 | -0.659 | -0.175 | -0.104 | -0.155 | -0.164 | -0.118 | -0.459 | -0.102 |
| 31 | -0.271 | ... | -0.240 | ... | -0.290 | ... | -0.217 | -0.118 | ... | -0.103 | ... | -0.159 |
| MEAN | -0.251 | -0.302 | -0.336 | -0.334 | -0.396 | -0.354 | -0.390 | -0.264 | -0.311 | -0.192 | -0.171 | -0.360 |

ITEM MOMENTUM FLUX (29.5 m HEIGHT)
 INSTRUMENT SONIC ANEMOMETER-THERMOMETER (DAT-300)
 UNIT x 0.1 (m/s)²
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|--------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | -1.215 | -2.029 | -1.259 | -3.351 | -2.463 | -0.796 | -0.631 | *** | -0.833 | -1.520 | -0.490 | -0.565 |
| 2 | -0.388 | -3.437 | -1.606 | -1.454 | -1.848 | -0.663 | -2.328 | *** | -0.646 | -0.400 | -0.447 | -0.370 |
| 3 | -0.428 | -3.845 | -2.415 | -1.403 | -1.606 | -1.097 | -2.572 | *** | -0.707 | -2.481 | -0.339 | -0.697 |
| 4 | -1.235 | -3.307 | *** | -1.182 | -2.291 | -1.330 | -1.692 | *** | -2.297 | -0.534 | -0.241 | -0.568 |
| 5 | -0.810 | -4.865 | -0.619 | -0.896 | -2.634 | -1.301 | -1.741 | -0.549 | -1.314 | -0.601 | -0.424 | -2.492 |
| 6 | -0.388 | -1.119 | -1.741 | -0.940 | -2.280 | -1.659 | -0.643 | -1.019 | -1.418 | -0.726 | -0.403 | -1.383 |
| 7 | -1.021 | -0.707 | -0.817 | -2.202 | -0.971 | -1.399 | -0.935 | *** | -8.309 | -1.033 | -2.493 | -0.400 |
| 8 | -3.338 | -0.413 | -1.338 | -2.815 | -1.875 | -0.891 | -2.549 | -0.773 | -2.160 | -1.222 | -2.274 | -0.258 |
| 9 | -1.571 | -0.507 | -2.264 | -1.854 | -1.249 | -1.120 | -1.004 | *** | -1.015 | -0.949 | -0.804 | -1.164 |
| 10 | -1.261 | -1.051 | -1.090 | -2.502 | -3.954 | -0.773 | -1.173 | -0.949 | -0.573 | -0.749 | -0.803 | -1.022 |
| 11 | -0.920 | -2.968 | -0.321 | -3.772 | -1.554 | -1.461 | -1.183 | -0.814 | -0.444 | -1.551 | -0.444 | -0.361 |
| 12 | -3.733 | -2.088 | -1.925 | -2.248 | -1.100 | -1.809 | -2.619 | -0.926 | -0.598 | -1.905 | -1.869 | -0.390 |
| 13 | -4.352 | -0.851 | -3.494 | -0.597 | -1.668 | -2.412 | -1.051 | -1.220 | -0.582 | -0.617 | -0.385 | -2.192 |
| 14 | -0.761 | -1.831 | -2.039 | -1.837 | -1.638 | -2.086 | -0.493 | -0.650 | -2.224 | -0.725 | -1.975 | -0.899 |
| 15 | -2.928 | -0.796 | -0.721 | -1.322 | -1.350 | -1.827 | -1.107 | -0.644 | -2.223 | -0.274 | -1.133 | -0.345 |
| 16 | -5.474 | -2.928 | -1.012 | -2.995 | -1.939 | -0.953 | -0.550 | *** | -1.133 | -1.359 | -0.240 | -1.172 |
| 17 | -1.734 | -0.807 | -0.736 | -1.339 | -2.201 | -0.855 | -0.656 | *** | -0.503 | -0.295 | -0.317 | -0.800 |
| 18 | -1.222 | -2.034 | -5.002 | -3.707 | -5.042 | -1.582 | -0.807 | -1.091 | -0.625 | -1.016 | -0.516 | -5.938 |
| 19 | -0.556 | -2.154 | -4.896 | -3.478 | -2.470 | -0.779 | -1.529 | *** | -0.384 | -1.279 | -2.943 | -4.813 |
| 20 | -1.874 | -1.356 | -0.401 | -1.010 | -1.467 | -0.751 | -0.830 | *** | -1.596 | -0.654 | -0.490 | -0.501 |
| 21 | -6.394 | -1.313 | -1.662 | -2.244 | -1.219 | -1.402 | -1.009 | *** | -1.976 | -0.941 | -0.367 | -0.306 |
| 22 | -4.701 | -1.440 | -1.507 | -4.353 | -1.766 | -0.965 | -2.623 | *** | -0.755 | -0.195 | -0.452 | -9.426 |
| 23 | -0.210 | -3.302 | -2.579 | -3.243 | -2.057 | -0.366 | -1.487 | *** | -0.497 | -2.368 | -0.426 | -1.727 |
| 24 | -0.498 | -3.200 | -1.718 | -3.866 | -1.322 | -0.717 | -0.840 | *** | -2.083 | -0.803 | -0.371 | -2.732 |
| 25 | -1.909 | -0.602 | -10.482 | -1.282 | -1.451 | -0.938 | -2.085 | *** | -5.167 | -0.479 | -0.490 | -0.368 |
| 26 | *** | -2.911 | -2.171 | -1.389 | -1.600 | -0.724 | -4.325 | *** | -2.215 | -1.434 | -0.352 | -5.360 |
| 27 | *** | -2.075 | -1.505 | -1.570 | -1.540 | -0.605 | -3.349 | *** | -1.249 | -0.383 | -0.369 | -4.398 |
| 28 | -0.867 | -0.999 | -1.852 | -1.655 | -1.971 | -1.093 | -1.094 | -0.850 | -1.114 | -0.499 | -0.479 | -3.373 |
| 29 | -0.484 | ... | -0.803 | -1.707 | -2.967 | -0.973 | -0.775 | -0.764 | -1.938 | -0.249 | -1.693 | -1.286 |
| 30 | -4.775 | ... | -5.119 | -1.863 | -3.576 | -0.546 | -1.009 | -0.935 | -0.919 | -0.598 | -2.368 | -0.386 |
| 31 | -1.523 | ... | -1.236 | ... | -3.007 | ... | -0.875 | -0.441 | ... | -0.580 | ... | -1.318 |
| MEAN | -1.951 | -1.962 | -2.144 | -2.136 | -2.067 | -1.129 | -1.470 | -0.830 | -1.583 | -0.917 | -0.880 | -1.839 |

ITEM SENSIBLE HEAT FLUX (1.6 m HEIGHT)
 INSTRUMENT SONIC ANEMOMETER-THERMOMETER (DAT-300)
 UNIT x 0.1 (°C m/s)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | *** | 0.23 | 0.35 | 0.51 | 0.23 | 0.22 | 0.06 | 0.51 | 0.18 | 0.11 | 0.24 | *** |
| 2 | 0.14 | 0.18 | 0.29 | 0.19 | 0.16 | -0.01 | 0.10 | 0.47 | 0.16 | 0.18 | 0.26 | 0.09 |
| 3 | 0.10 | 0.13 | 0.28 | 0.46 | 0.40 | 0.13 | 0.09 | 0.50 | 0.12 | 0.07 | 0.08 | 0.25 |
| 4 | 0.07 | 0.20 | *** | 0.16 | 0.47 | 0.11 | *** | 0.62 | 0.12 | 0.01 | 0.18 | *** |
| 5 | 0.11 | 0.16 | -0.04 | 0.44 | 0.32 | 0.24 | 0.24 | 0.59 | 0.04 | 0.01 | 0.06 | *** |
| 6 | 0.08 | 0.16 | 0.10 | 0.39 | 0.14 | 0.30 | *** | 0.45 | 0.06 | 0.01 | *** | *** |
| 7 | 0.02 | 0.18 | 0.33 | 0.31 | 0.16 | 0.20 | 0.14 | 0.47 | -0.24 | 0.18 | *** | 0.24 |
| 8 | 0.11 | 0.01 | 0.29 | 0.42 | 0.09 | 0.14 | 0.19 | 0.37 | 0.05 | *** | -0.12 | 0.18 |
| 9 | 0.17 | *** | 0.34 | 0.53 | 0.39 | 0.09 | 0.04 | 0.38 | -0.04 | -0.06 | 0.18 | 0.27 |
| 10 | 0.13 | 0.10 | 0.16 | 0.43 | 0.34 | 0.06 | 0.23 | 0.08 | 0.15 | 0.03 | 0.16 | 0.26 |
| 11 | 0.18 | 0.28 | 0.02 | 0.00 | 0.09 | 0.04 | 0.08 | 0.36 | 0.08 | -0.01 | 0.07 | 0.04 |
| 12 | 0.08 | 0.27 | 0.08 | 0.04 | 0.19 | 0.16 | 0.01 | 0.10 | 0.19 | 0.01 | 0.08 | 0.18 |
| 13 | 0.16 | 0.21 | 0.44 | 0.03 | 0.03 | 0.32 | 0.05 | *** | 0.16 | 0.13 | 0.23 | 0.30 |
| 14 | 0.14 | 0.28 | 0.44 | 0.41 | 0.39 | 0.14 | 0.02 | 0.35 | 0.01 | 0.18 | 0.01 | 0.29 |
| 15 | -0.08 | 0.17 | 0.23 | 0.44 | 0.27 | -0.02 | 0.12 | 0.29 | 0.02 | 0.07 | 0.02 | 0.18 |
| 16 | -0.22 | *** | 0.36 | 0.36 | 0.55 | 0.03 | 0.05 | 0.21 | 0.12 | *** | 0.24 | 0.28 |
| 17 | 0.03 | 0.21 | -0.01 | 0.49 | 0.44 | 0.10 | 0.08 | 0.38 | 0.19 | 0.02 | 0.22 | 0.15 |
| 18 | 0.08 | 0.10 | 0.08 | 0.45 | 0.05 | 0.22 | 0.10 | 0.18 | 0.21 | *** | 0.27 | 0.21 |
| 19 | 0.07 | -0.01 | 0.46 | 0.49 | 0.20 | 0.11 | -0.04 | 0.17 | 0.16 | -0.07 | 0.10 | 0.29 |
| 20 | *** | *** | 0.19 | 0.03 | 0.18 | 0.13 | 0.14 | 0.22 | 0.04 | 0.13 | 0.22 | 0.23 |
| 21 | 0.01 | 0.24 | 0.37 | 0.20 | 0.31 | 0.14 | 0.37 | 0.19 | 0.07 | 0.07 | 0.30 | *** |
| 22 | 0.15 | 0.30 | 0.05 | 0.45 | 0.19 | -0.01 | 0.37 | -0.01 | 0.00 | 0.00 | 0.22 | -0.06 |
| 23 | 0.09 | 0.26 | *** | 0.55 | 0.24 | 0.05 | 0.37 | 0.11 | 0.14 | 0.17 | 0.15 | 0.13 |
| 24 | 0.13 | 0.21 | 0.09 | 0.59 | 0.19 | 0.13 | 0.34 | *** | *** | 0.12 | 0.25 | 0.13 |
| 25 | 0.15 | *** | 0.40 | 0.15 | 0.35 | 0.17 | 0.62 | 0.04 | -0.16 | 0.17 | 0.12 | 0.16 |
| 26 | *** | 0.05 | 0.46 | 0.16 | 0.42 | 0.01 | *** | -0.05 | 0.11 | 0.16 | 0.17 | 0.10 |
| 27 | *** | 0.29 | 0.45 | *** | 0.29 | 0.06 | 0.43 | 0.09 | -0.01 | -0.03 | 0.21 | 0.04 |
| 28 | 0.08 | 0.34 | *** | 0.45 | 0.19 | -0.02 | 0.69 | 0.03 | 0.00 | 0.20 | 0.16 | 0.03 |
| 29 | 0.12 | ... | 0.06 | 0.27 | 0.40 | 0.01 | 0.52 | 0.23 | 0.10 | 0.04 | 0.10 | 0.09 |
| 30 | 0.07 | ... | 0.53 | 0.34 | -0.05 | 0.09 | 0.50 | 0.08 | 0.12 | -0.05 | 0.22 | 0.17 |
| 31 | 0.18 | ... | 0.44 | ... | 0.01 | ... | 0.41 | 0.07 | ... | 0.05 | ... | 0.10 |
| MEAN | 0.09 | 0.19 | 0.26 | 0.34 | 0.25 | 0.11 | 0.23 | 0.26 | 0.07 | 0.07 | 0.16 | 0.17 |

ITEM SENSIBLE HEAT FLUX (29.5 m HEIGHT)
 INSTRUMENT SONIC ANEMOMETER-THERMOMETER (DAT-300)
 UNIT x 0.1 (°C m/s)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 0.03 | 0.32 | 0.43 | 0.69 | 0.28 | 0.45 | 0.06 | 0.32 | 0.23 | 0.23 | 0.22 | 0.27 |
| 2 | 0.23 | 0.32 | 0.37 | 0.24 | 0.21 | 0.03 | 0.23 | 0.20 | 0.19 | 0.21 | 0.28 | 0.06 |
| 3 | 0.24 | 0.20 | 0.44 | 0.55 | 0.72 | 0.15 | 0.22 | 0.21 | 0.19 | 0.28 | 0.10 | 0.16 |
| 4 | 0.01 | 0.25 | *** | 0.16 | 0.64 | 0.11 | -0.08 | 0.53 | 0.25 | 0.00 | 0.15 | -0.02 |
| 5 | 0.20 | 0.39 | 0.12 | 0.49 | 0.55 | 0.45 | 0.38 | 0.45 | 0.02 | -0.03 | 0.05 | 0.17 |
| 6 | 0.07 | 0.21 | 0.30 | 0.54 | 0.16 | 0.61 | -0.01 | 0.28 | 0.07 | 0.01 | -0.07 | 0.14 |
| 7 | 0.04 | 0.27 | 0.44 | 0.31 | 0.15 | 0.36 | 0.17 | 0.31 | -0.08 | 0.30 | 0.13 | 0.24 |
| 8 | 0.15 | -0.01 | 0.46 | 0.60 | 0.16 | 0.28 | 0.47 | 0.27 | 0.14 | -0.03 | -0.18 | 0.09 |
| 9 | 0.16 | 0.15 | 0.50 | 0.77 | 0.56 | 0.23 | 0.05 | 0.43 | -0.02 | -0.07 | 0.15 | 0.17 |
| 10 | 0.14 | 0.19 | 0.24 | 0.52 | 0.69 | 0.03 | 0.23 | 0.05 | 0.21 | -0.04 | 0.12 | 0.12 |
| 11 | 0.21 | 0.52 | 0.01 | 0.04 | 0.19 | 0.13 | 0.18 | 0.39 | 0.06 | -0.02 | 0.07 | -0.01 |
| 12 | 0.19 | 0.47 | 0.25 | 0.06 | 0.29 | 0.38 | 0.18 | 0.04 | 0.25 | 0.01 | 0.09 | 0.16 |
| 13 | 0.09 | 0.24 | 0.71 | 0.04 | 0.06 | 0.67 | 0.17 | 0.08 | 0.18 | 0.19 | 0.26 | 0.18 |
| 14 | 0.18 | 0.46 | 0.63 | 0.54 | 0.60 | 0.30 | 0.03 | 0.31 | 0.16 | 0.29 | 0.02 | 0.22 |
| 15 | -0.20 | 0.25 | 0.29 | 0.62 | 0.30 | -0.07 | 0.28 | 0.34 | 0.17 | 0.11 | 0.05 | 0.17 |
| 16 | -0.18 | -0.03 | 0.49 | 0.56 | 0.82 | 0.04 | 0.10 | 0.24 | 0.23 | 0.00 | 0.22 | 0.14 |
| 17 | 0.13 | 0.23 | -0.02 | 0.57 | 0.68 | 0.13 | 0.16 | 0.45 | 0.19 | -0.01 | 0.20 | 0.09 |
| 18 | 0.21 | 0.17 | 0.26 | 0.76 | 0.17 | 0.42 | 0.26 | 0.16 | 0.28 | -0.20 | 0.10 | 0.28 |
| 19 | 0.14 | -0.05 | 0.68 | 0.82 | 0.33 | 0.24 | 0.11 | 0.16 | 0.18 | -0.12 | 0.20 | 0.28 |
| 20 | 0.11 | -0.03 | 0.19 | 0.01 | 0.39 | 0.26 | 0.08 | 0.19 | 0.17 | 0.21 | 0.23 | 0.21 |
| 21 | 0.17 | 0.36 | 0.60 | 0.13 | 0.57 | 0.37 | 0.30 | 0.30 | 0.24 | 0.15 | 0.11 | 0.12 |
| 22 | 0.14 | 0.44 | 0.01 | 0.61 | 0.38 | 0.00 | 0.43 | 0.04 | 0.04 | 0.03 | 0.14 | 0.14 |
| 23 | 0.11 | 0.24 | -0.08 | 0.70 | 0.33 | 0.06 | 0.33 | 0.13 | 0.15 | 0.10 | 0.11 | 0.15 |
| 24 | 0.13 | 0.29 | 0.14 | 1.01 | 0.26 | 0.21 | 0.24 | 0.10 | -0.16 | 0.10 | 0.28 | 0.24 |
| 25 | 0.19 | 0.02 | 0.83 | 0.19 | 0.53 | 0.34 | 0.45 | 0.00 | -0.12 | 0.19 | 0.09 | 0.12 |
| 26 | *** | 0.34 | 0.61 | 0.32 | 0.68 | 0.14 | -0.28 | -0.03 | 0.22 | 0.10 | 0.09 | 0.22 |
| 27 | *** | 0.50 | 0.54 | 0.98 | 0.57 | 0.08 | 0.35 | 0.11 | 0.05 | -0.01 | 0.19 | 0.02 |
| 28 | 0.15 | 0.54 | -0.03 | 0.61 | 0.47 | 0.08 | 0.62 | 0.02 | 0.07 | 0.16 | 0.14 | 0.14 |
| 29 | 0.17 | ... | 0.08 | 0.49 | 0.63 | 0.07 | 0.44 | 0.25 | 0.31 | 0.05 | 0.09 | 0.18 |
| 30 | 0.30 | ... | 0.79 | 0.60 | -0.07 | 0.12 | 0.35 | 0.17 | 0.20 | -0.05 | 0.17 | 0.13 |
| 31 | 0.30 | ... | 0.55 | ... | -0.09 | ... | 0.34 | 0.05 | ... | 0.15 | ... | 0.12 |
| MEAN | 0.13 | 0.26 | 0.36 | 0.48 | 0.39 | 0.22 | 0.22 | 0.21 | 0.14 | 0.07 | 0.13 | 0.15 |

ITEM SHORT-WAVE RADIATION (1.5 m HEIGHT)
 INSTRUMENT PYRANOMETER (GORCYNSKI TYPE) (MS-43F)
 UNIT (W/m²)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 126.2 | 158.0 | 212.6 | 285.2 | 179.2 | 276.6 | 79.2 | 217.9 | 256.5 | 203.9 | 175.1 | 132.6 |
| 2 | 136.6 | 172.2 | 201.6 | 118.8 | 198.4 | 89.5 | 203.3 | 198.1 | 250.8 | 207.7 | 163.5 | 65.0 |
| 3 | 115.4 | 165.4 | 188.6 | 252.3 | 318.7 | 117.6 | 114.6 | 217.2 | 244.8 | 167.9 | 102.3 | 123.0 |
| 4 | 111.5 | 161.6 | 54.7 | 119.1 | 316.8 | 101.8 | 38.0 | 293.0 | 170.2 | 25.8 | 151.3 | 28.3 |
| 5 | 135.5 | 170.3 | 156.4 | 270.7 | 278.7 | 267.6 | 236.2 | 289.9 | 100.9 | 36.0 | 144.4 | 141.4 |
| 6 | 52.1 | 156.9 | 134.0 | 257.4 | 82.9 | 331.4 | 89.7 | 252.4 | 88.9 | 89.8 | 36.5 | 70.7 |
| 7 | 129.0 | 135.9 | 234.3 | 204.8 | 145.2 | 229.4 | 222.7 | 240.0 | 164.2 | 180.2 | 155.7 | 132.2 |
| 8 | 140.4 | 16.8 | 233.3 | 264.6 | 123.6 | 219.6 | 247.4 | 186.2 | 264.0 | 55.3 | 150.7 | 108.7 |
| 9 | 129.4 | 102.8 | 214.9 | 282.7 | 262.7 | 172.2 | 71.5 | 258.4 | 71.5 | 40.6 | 157.7 | 131.4 |
| 10 | 139.9 | 116.6 | 92.7 | 202.7 | 328.0 | 97.3 | 230.1 | 118.4 | 198.2 | 46.1 | 146.2 | 126.8 |
| 11 | 129.2 | 192.8 | 26.1 | 49.4 | 102.3 | 140.9 | 232.1 | 235.4 | 134.2 | 93.4 | 65.0 | 57.4 |
| 12 | 126.1 | 169.3 | 119.1 | 55.1 | 145.6 | 278.2 | 53.9 | 101.8 | 238.8 | 166.2 | 129.2 | 99.2 |
| 13 | 143.9 | 112.4 | 258.7 | 40.9 | 69.9 | 305.9 | 130.9 | 156.3 | 223.8 | 192.0 | 129.3 | 131.1 |
| 14 | 130.8 | 189.7 | 254.0 | 278.4 | 235.8 | 166.9 | 58.3 | 246.9 | 186.8 | 178.3 | 57.1 | 130.2 |
| 15 | 25.7 | 170.6 | 155.0 | 285.7 | 186.3 | 54.6 | 235.1 | 211.0 | 129.1 | 89.3 | 69.7 | 119.9 |
| 16 | 13.3 | 20.6 | 240.2 | 202.6 | 345.5 | 83.9 | 122.4 | 215.1 | 214.5 | 29.7 | 139.9 | 129.6 |
| 17 | 129.9 | 170.7 | 36.0 | 277.4 | 259.6 | 141.9 | 190.7 | 289.9 | 238.6 | 36.7 | 137.5 | 126.8 |
| 18 | 147.4 | 96.8 | 154.5 | 249.3 | 170.3 | 217.3 | 273.1 | 168.6 | 237.6 | 17.4 | 142.9 | 131.5 |
| 19 | 81.3 | 23.3 | 258.0 | 274.3 | 230.7 | 199.6 | 218.1 | 217.2 | 200.1 | 53.3 | 136.9 | 128.6 |
| 20 | 144.2 | 65.5 | 117.2 | 34.9 | 242.8 | 207.0 | 205.2 | 247.4 | 116.4 | 184.5 | 134.6 | 127.1 |
| 21 | 153.4 | 178.8 | 261.7 | 145.2 | 303.7 | 269.6 | 259.4 | 275.4 | 177.6 | 149.7 | 132.2 | 85.7 |
| 22 | 155.8 | 214.9 | 56.1 | 262.6 | 215.5 | 90.8 | 179.1 | 182.2 | 63.1 | 27.9 | 134.5 | 93.5 |
| 23 | 55.8 | 197.2 | 20.9 | 306.8 | 229.6 | 98.8 | 167.8 | 169.1 | 149.8 | 190.9 | 94.9 | 127.9 |
| 24 | 104.5 | 112.1 | 118.4 | 318.2 | 206.7 | 241.2 | 146.4 | 133.4 | 43.4 | 167.6 | 126.9 | 121.7 |
| 25 | 137.1 | 73.8 | 272.5 | 123.1 | 286.2 | 293.0 | 246.7 | 94.3 | 80.0 | 178.0 | 84.6 | 105.2 |
| 26 | 87.8 | 212.6 | 268.0 | 104.1 | 345.3 | 195.6 | 49.3 | 139.7 | 214.9 | 95.7 | 103.0 | 129.8 |
| 27 | 131.8 | 221.8 | 263.2 | 312.5 | 278.3 | 174.4 | 302.5 | 175.0 | 87.7 | 55.8 | 117.6 | 129.4 |
| 28 | 142.8 | 221.1 | 45.7 | 295.4 | 277.0 | 179.0 | 319.1 | 123.8 | 117.8 | 152.9 | 116.0 | 133.2 |
| 29 | 86.9 | ... | 96.3 | 277.9 | 304.0 | 101.6 | 228.4 | 278.6 | 229.5 | 57.1 | 103.0 | 128.8 |
| 30 | 166.5 | ... | 291.8 | 277.8 | 56.0 | 146.3 | 210.1 | 213.8 | 191.8 | 49.9 | 136.1 | 121.7 |
| 31 | 155.8 | ... | 241.0 | ... | 123.3 | ... | 199.3 | 142.4 | ... | 94.3 | ... | 131.4 |
| MEAN | 118.2 | 142.9 | 169.9 | 214.3 | 220.9 | 183.0 | 179.4 | 202.9 | 169.5 | 106.9 | 122.5 | 114.5 |

ITEM NET RADIATION (1.5 m HEIGHT)
 INSTRUMENT NET RADIOMETER (MIDDLETON TYPE) (CN-11)
 UNIT (W/m²)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|
| 1 | 23.5 | 39.3 | 74.3 | 125.9 | 105.7 | 192.0 | 53.0 | 137.4 | 165.5 | 113.2 | 67.5 | *** |
| 2 | 31.0 | 45.0 | 65.3 | 52.9 | 128.8 | 53.3 | 143.1 | 132.6 | 173.2 | 127.7 | 66.9 | *** |
| 3 | 29.7 | 34.3 | 72.6 | 120.6 | 179.6 | 92.0 | 97.0 | 144.7 | 152.8 | 113.9 | 43.2 | *** |
| 4 | 28.4 | 40.6 | -5.8 | 51.2 | 181.4 | 80.8 | 32.7 | 190.1 | 110.1 | 13.8 | 65.7 | *** |
| 5 | 16.8 | 38.1 | 33.5 | 124.1 | 162.0 | 197.4 | 184.9 | 188.6 | 69.6 | 21.2 | 49.5 | *** |
| 6 | 11.5 | 30.9 | 56.0 | 125.0 | 59.1 | 216.7 | 55.2 | 161.3 | 21.8 | 38.7 | 9.4 | 11.2 |
| 7 | 20.1 | 39.5 | 86.6 | 95.3 | 88.6 | 150.6 | 165.8 | 155.1 | 46.3 | 117.8 | 76.2 | 44.1 |
| 8 | 21.0 | 0.1 | 81.9 | 121.1 | 79.7 | 137.0 | 190.1 | 122.0 | 161.3 | 37.2 | 29.8 | 19.1 |
| 9 | 24.5 | 42.0 | 85.1 | 137.7 | 173.5 | 113.9 | 56.5 | 182.7 | 48.2 | 23.1 | 44.1 | 40.0 |
| 10 | 18.6 | 51.8 | 45.9 | 113.2 | 184.4 | 72.5 | 167.2 | 81.3 | 129.4 | 30.9 | 47.2 | 28.7 |
| 11 | 25.3 | 74.6 | 6.9 | 33.4 | 54.6 | 108.7 | 171.0 | 166.3 | 82.3 | 56.3 | 14.4 | -2.3 |
| 12 | 13.5 | 63.7 | 60.9 | 36.9 | 88.3 | 197.8 | 45.2 | 74.7 | 150.0 | 79.5 | 53.7 | 12.7 |
| 13 | 29.1 | 25.2 | 110.7 | 18.0 | 29.2 | 219.2 | 104.2 | 121.4 | 140.2 | 96.2 | 48.1 | -25.3 |
| 14 | 34.6 | 68.5 | 96.3 | 162.4 | 153.4 | 125.3 | 38.8 | 171.5 | 112.8 | 107.4 | 21.4 | 23.7 |
| 15 | 12.4 | 56.9 | 52.8 | 139.7 | 105.5 | 39.5 | 178.1 | 153.3 | 80.2 | 62.5 | 30.4 | *** |
| 16 | 0.9 | 7.1 | 92.8 | 105.2 | 183.1 | 58.7 | 89.6 | 158.8 | 122.0 | 4.4 | 45.5 | 20.3 |
| 17 | 40.3 | 74.9 | 4.0 | 137.4 | 137.5 | 108.7 | 134.2 | 193.5 | 135.0 | 11.9 | 35.5 | 18.1 |
| 18 | 42.6 | 32.3 | 54.6 | 135.4 | 96.6 | 160.3 | 200.7 | 114.2 | 145.7 | 5.1 | 44.7 | *** |
| 19 | 15.2 | 11.4 | 94.7 | 142.4 | 131.5 | 138.8 | 142.4 | 148.2 | 125.7 | 17.5 | *** | *** |
| 20 | 25.1 | 27.9 | 32.4 | 20.2 | 134.3 | 141.4 | 135.7 | 169.0 | 78.1 | 96.3 | *** | 23.3 |
| 21 | 14.6 | 70.9 | 95.3 | 88.0 | 179.7 | 184.8 | 185.0 | 189.9 | 116.5 | 69.3 | *** | 15.4 |
| 22 | 25.4 | 81.8 | 16.1 | 146.4 | 137.3 | 58.2 | 133.4 | 116.7 | 38.3 | -1.1 | *** | *** |
| 23 | 8.2 | 71.0 | 13.3 | 148.7 | 137.4 | 66.6 | 109.3 | 122.2 | 100.6 | 89.1 | *** | 10.3 |
| 24 | 30.0 | 45.6 | 58.3 | 160.0 | -22.1 | 166.9 | 92.8 | 102.7 | 28.2 | 72.3 | *** | 13.4 |
| 25 | 41.8 | 17.3 | 125.1 | 66.4 | 159.1 | 204.1 | 170.5 | 74.5 | 47.8 | 86.0 | *** | 14.9 |
| 26 | 6.2 | 84.8 | 112.9 | 50.5 | 208.7 | 130.8 | 26.0 | 106.5 | 128.2 | 55.3 | *** | 4.4 |
| 27 | 30.6 | 87.7 | 114.9 | 176.3 | 196.1 | 118.4 | 133.2 | 125.7 | 54.0 | 9.7 | *** | 0.4 |
| 28 | 37.2 | 83.5 | 24.1 | 158.6 | 168.2 | 131.5 | 190.0 | 92.0 | 67.5 | 73.8 | *** | 6.3 |
| 29 | 31.4 | ... | 48.2 | 150.9 | 201.7 | 72.7 | 140.7 | 185.2 | 114.3 | 21.7 | *** | 13.5 |
| 30 | 50.6 | ... | 138.1 | 148.8 | 43.8 | 107.1 | 136.3 | 138.2 | 101.3 | 18.3 | *** | 23.8 |
| 31 | 46.5 | ... | 101.0 | ... | 76.8 | ... | 126.2 | 86.3 | ... | 33.5 | ... | 12.9 |
| MEAN | 25.4 | 48.1 | 66.1 | 109.7 | 127.2 | 128.2 | 123.5 | 138.9 | 101.6 | 54.9 | 44.1 | 15.0 |

ITEM SOIL HEAT FLUX (0.02 m DEPTH)
 INSTRUMENT SOIL HEAT FLUX METER (CPR-PHF-01)
 UNIT (W/m²)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|-----|-----|------|-------|------|------|------|------|------|-------|-------|------|
| 1 | *** | *** | *** | 3.7 | 13.5 | 10.3 | 3.1 | 12.5 | -1.3 | 2.6 | -14.2 | -7.8 |
| 2 | *** | *** | *** | 0.8 | 5.0 | 2.0 | 3.8 | 13.5 | 1.7 | -6.0 | -9.1 | -5.9 |
| 3 | *** | *** | *** | 12.7 | 4.2 | 4.9 | -4.5 | 15.5 | 0.8 | -5.1 | -3.6 | -9.3 |
| 4 | *** | *** | *** | -11.1 | 8.0 | -0.6 | -1.5 | 19.5 | -1.2 | -3.4 | -6.3 | -5.9 |
| 5 | *** | *** | *** | 4.2 | 3.3 | 9.2 | 6.7 | 19.0 | -2.9 | -6.8 | -3.8 | -6.2 |
| 6 | *** | *** | *** | 14.0 | -4.4 | 3.7 | -2.2 | 17.1 | -0.3 | -6.5 | -3.3 | -5.9 |
| 7 | *** | *** | *** | 13.4 | 1.8 | 3.3 | 4.4 | 16.7 | 2.3 | 1.4 | -1.1 | -6.3 |
| 8 | *** | *** | *** | 6.4 | -2.4 | 2.9 | 0.2 | 6.4 | 2.9 | 2.0 | -5.4 | -5.8 |
| 9 | *** | *** | *** | 6.8 | 12.7 | 5.3 | -2.0 | 8.3 | -5.6 | -5.2 | -10.9 | -6.1 |
| 10 | *** | *** | *** | 12.2 | 1.7 | 5.4 | 8.9 | 0.5 | 2.4 | -5.2 | -9.9 | -6.8 |
| 11 | *** | *** | *** | -7.2 | -7.3 | 9.5 | 8.0 | 7.3 | -0.6 | -7.1 | -7.5 | -7.3 |
| 12 | *** | *** | *** | -9.9 | 0.8 | 9.5 | -6.2 | 3.0 | -0.6 | -6.9 | -5.6 | -8.1 |
| 13 | *** | *** | *** | -5.3 | -5.4 | 4.7 | -1.0 | 6.9 | 2.2 | -4.9 | -9.6 | -9.0 |
| 14 | *** | *** | *** | 14.3 | 7.5 | 1.3 | 0.5 | 9.8 | 0.5 | -3.3 | -6.5 | -8.9 |
| 15 | *** | *** | *** | 10.3 | 8.3 | -2.0 | 8.1 | 7.8 | -7.9 | -7.9 | -6.4 | -7.5 |
| 16 | *** | *** | *** | -1.4 | 7.1 | -0.2 | 5.1 | 2.7 | -8.1 | -9.1 | -11.3 | -6.6 |
| 17 | *** | *** | *** | 8.0 | 9.7 | 5.0 | 5.1 | 2.5 | -5.3 | -6.4 | -14.2 | -5.7 |
| 18 | *** | *** | *** | 3.8 | 9.8 | 6.1 | 5.3 | 4.3 | -0.8 | -7.7 | -10.7 | -7.8 |
| 19 | *** | *** | *** | 8.2 | 14.7 | 7.0 | -1.0 | 6.8 | 1.9 | -5.9 | -10.4 | -7.4 |
| 20 | *** | *** | *** | -1.7 | 3.3 | 4.8 | -2.3 | 6.7 | -1.7 | -8.2 | -11.1 | -6.0 |
| 21 | *** | *** | *** | 4.3 | 13.7 | 6.8 | 4.1 | 9.9 | -1.2 | -2.8 | -9.8 | -3.8 |
| 22 | *** | *** | *** | -2.5 | 14.8 | 1.0 | -1.2 | 4.8 | -2.0 | -3.3 | -6.5 | -4.3 |
| 23 | *** | *** | *** | -1.9 | 0.0 | 5.3 | 4.3 | 3.2 | 2.3 | -4.3 | -4.6 | -5.2 |
| 24 | *** | *** | *** | 2.9 | 4.0 | 2.3 | 8.4 | 4.9 | -1.4 | -2.6 | -6.4 | -3.2 |
| 25 | *** | *** | *** | -5.1 | 4.0 | 0.4 | 7.2 | 10.5 | -1.3 | -6.3 | -7.7 | -5.9 |
| 26 | *** | *** | *** | -2.6 | -2.4 | 4.3 | 6.2 | 1.7 | 4.3 | -3.9 | -5.9 | -4.1 |
| 27 | *** | *** | *** | 5.3 | 8.3 | 10.0 | 4.8 | 10.9 | 3.2 | -6.2 | -8.2 | -5.2 |
| 28 | *** | *** | *** | -0.4 | 13.4 | 6.5 | 7.1 | 8.9 | -3.0 | -5.9 | -2.8 | -3.2 |
| 29 | *** | ... | 2.6 | 18.0 | 8.2 | -0.6 | 10.7 | -1.2 | -6.2 | -3.3 | -4.0 | -5.2 |
| 30 | *** | ... | -1.3 | 6.3 | 0.9 | 5.0 | 10.3 | -0.1 | -6.0 | -4.3 | -7.9 | -4.7 |
| 31 | *** | ... | 1.6 | ... | 0.5 | ... | 10.7 | -2.3 | ... | -11.2 | ... | -4.6 |
| MEAN | *** | *** | 0.1 | 4.5 | 5.1 | 4.7 | 3.6 | 6.5 | -2.0 | -4.2 | -7.2 | -6.3 |

ITEM AIR TEMPERATURE (1.6 m HEIGHT)
 INSTRUMENT PT RESISTANCE THERMOMETER (E-731)
 UNIT (° C)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|------|-----|------|------|------|------|------|------|------|------|------|------|
| 1 | 0.1 | 0.2 | 2.6 | 8.3 | 18.3 | 20.1 | 23.5 | 28.1 | 24.5 | 19.9 | 8.6 | 3.9 |
| 2 | -1.0 | 0.3 | 2.3 | 9.2 | 18.9 | 18.8 | 23.7 | 28.5 | 26.0 | 22.8 | 9.8 | 4.3 |
| 3 | 0.6 | 1.6 | 2.7 | 12.3 | 15.5 | 18.0 | 19.5 | 29.1 | 26.6 | 21.9 | 12.1 | 3.1 |
| 4 | 5.5 | 2.7 | 0.6 | 5.5 | 17.0 | 15.7 | 19.9 | 28.9 | 24.8 | 18.0 | 12.4 | 2.9 |
| 5 | 1.6 | 2.3 | 2.3 | 8.0 | 15.9 | 18.8 | 22.7 | 29.1 | 23.1 | 17.9 | 13.2 | 4.4 |
| 6 | -0.4 | 2.6 | 1.5 | 14.3 | 11.5 | 18.8 | 20.3 | 29.2 | 23.9 | 18.3 | 12.9 | 4.3 |
| 7 | 4.5 | 2.1 | 3.5 | 18.3 | 13.3 | 18.2 | 22.5 | 28.7 | 27.3 | 19.5 | 16.0 | 2.8 |
| 8 | 2.0 | 2.8 | 6.7 | 17.1 | 13.5 | 18.9 | 20.7 | 26.3 | 28.2 | 22.0 | 14.6 | 3.8 |
| 9 | 0.0 | 3.1 | 6.4 | 11.8 | 15.8 | 20.4 | 19.7 | 26.0 | 23.5 | 18.2 | 10.7 | 4.4 |
| 10 | 0.5 | 6.1 | 6.8 | 15.9 | 16.2 | 20.7 | 25.2 | 25.4 | 25.6 | 17.4 | 9.2 | 3.6 |
| 11 | -0.3 | 2.5 | 6.6 | 11.0 | 11.3 | 22.4 | 26.3 | 26.3 | 24.8 | 18.5 | 8.7 | 1.1 |
| 12 | -0.6 | 1.3 | 8.1 | 6.7 | 11.8 | 23.7 | 19.6 | 25.9 | 24.5 | 17.7 | 10.9 | -0.2 |
| 13 | 2.5 | 1.3 | 3.2 | 7.1 | 10.7 | 21.3 | 20.4 | 25.9 | 26.5 | 16.8 | 8.1 | 0.7 |
| 14 | 2.5 | 1.7 | 2.4 | 12.2 | 11.1 | 19.6 | 21.3 | 27.9 | 26.5 | 19.5 | 8.7 | -0.3 |
| 15 | 5.0 | 5.3 | 3.4 | 14.9 | 14.1 | 18.5 | 25.4 | 27.8 | 22.0 | 21.9 | 8.9 | -0.3 |
| 16 | 5.2 | 3.0 | 8.5 | 12.6 | 12.7 | 18.2 | 25.5 | 25.7 | 19.7 | 18.3 | 6.3 | 1.6 |
| 17 | 4.4 | 5.5 | 9.7 | 13.7 | 13.9 | 19.5 | 26.6 | 24.8 | 19.9 | 17.0 | 3.8 | 1.8 |
| 18 | 4.6 | 3.6 | 11.5 | 11.0 | 17.1 | 20.6 | 26.9 | 26.2 | 22.8 | 16.1 | 4.6 | 0.2 |
| 19 | 4.4 | 3.0 | 6.5 | 12.2 | 20.8 | 22.8 | 24.8 | 28.0 | 24.8 | 16.2 | 5.4 | -0.1 |
| 20 | 3.7 | 6.0 | 3.6 | 10.8 | 16.8 | 23.0 | 22.7 | 28.1 | 22.8 | 16.0 | 3.5 | 0.4 |
| 21 | 4.0 | 3.2 | 8.0 | 13.7 | 18.2 | 24.0 | 25.7 | 28.5 | 22.4 | 17.0 | 3.7 | 1.0 |
| 22 | 2.5 | 2.8 | 10.3 | 12.6 | 19.1 | 21.7 | 22.7 | 28.0 | 21.3 | 14.7 | 6.2 | 1.7 |
| 23 | 0.0 | 7.1 | 9.8 | 13.0 | 17.6 | 22.4 | 22.1 | 26.8 | 23.6 | 14.1 | 7.3 | 1.6 |
| 24 | 2.1 | 3.3 | 8.4 | 11.1 | 15.8 | 24.8 | 23.0 | 23.1 | 22.0 | 14.5 | 9.0 | -0.2 |
| 25 | 4.0 | 2.1 | 4.7 | 13.5 | 14.4 | 25.7 | 25.6 | 23.9 | 20.1 | 14.1 | 7.1 | -1.4 |
| 26 | 0.8 | 1.6 | 4.4 | 13.8 | 14.8 | 26.2 | 24.6 | 26.8 | 20.2 | 13.2 | 7.7 | 0.8 |
| 27 | 1.6 | 1.0 | 8.2 | 14.0 | 17.9 | 25.5 | 28.0 | 26.2 | 18.6 | 13.4 | 7.6 | 2.1 |
| 28 | 2.4 | 3.9 | 8.4 | 17.8 | 18.9 | 26.5 | 26.4 | 23.8 | 18.3 | 14.2 | 8.5 | 1.6 |
| 29 | 4.0 | ... | 9.7 | 21.3 | 16.7 | 22.6 | 27.7 | 24.5 | 18.0 | 15.5 | 9.6 | 1.1 |
| 30 | 4.8 | ... | 7.3 | 16.6 | 17.3 | 23.6 | 27.7 | 24.7 | 17.3 | 15.1 | 7.4 | -0.4 |
| 31 | 3.6 | ... | 7.1 | ... | 17.2 | ... | 27.9 | 23.9 | ... | 11.5 | ... | 1.2 |
| MEAN | 2.4 | 2.9 | 6.0 | 12.7 | 15.6 | 21.4 | 23.8 | 26.6 | 23.0 | 17.1 | 8.7 | 1.7 |

ITEM AIR TEMPERATURE (12.3 m HEIGHT)
 INSTRUMENT PT RESISTANCE THERMOMETER (E-731)
 UNIT (° C)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|-----|-----|------|------|------|------|------|------|------|------|------|-----|
| 1 | 1.4 | 1.3 | 3.2 | 8.9 | 18.7 | 20.6 | 23.6 | 27.7 | 25.2 | 20.6 | 10.5 | 5.6 |
| 2 | 1.3 | 1.3 | 2.9 | 9.1 | 18.7 | 19.1 | 23.5 | 28.1 | 26.8 | 23.8 | 11.4 | 5.0 |
| 3 | 1.7 | 2.4 | 2.8 | 12.4 | 15.7 | 17.7 | 19.3 | 28.7 | 27.3 | 22.0 | 12.7 | 4.9 |
| 4 | 6.4 | 4.3 | 0.6 | 5.9 | 17.6 | 15.5 | 19.8 | 28.6 | 24.7 | 18.0 | 14.0 | 4.0 |
| 5 | 2.7 | 3.3 | 2.4 | 9.4 | 16.1 | 18.9 | 22.4 | 28.9 | 23.1 | 17.9 | 14.2 | 5.1 |
| 6 | 0.3 | 3.6 | 1.7 | 15.3 | 11.6 | 19.1 | 20.7 | 29.2 | 23.8 | 18.3 | 13.4 | 5.1 |
| 7 | 4.9 | 3.1 | 4.4 | 18.5 | 13.5 | 18.0 | 23.0 | 28.6 | 27.3 | 19.8 | 17.4 | 4.3 |
| 8 | 3.2 | 2.8 | 7.2 | 17.8 | 13.5 | 19.4 | 20.9 | 26.3 | 28.2 | 21.9 | 15.5 | 4.9 |
| 9 | 1.2 | 3.4 | 6.9 | 12.2 | 15.6 | 20.9 | 19.5 | 25.9 | 23.5 | 18.2 | 12.8 | 5.9 |
| 10 | 2.1 | 6.2 | 6.6 | 15.8 | 16.5 | 20.8 | 25.4 | 25.2 | 25.7 | 17.4 | 10.7 | 5.9 |
| 11 | 2.3 | 3.4 | 6.8 | 11.3 | 11.5 | 22.2 | 26.3 | 26.0 | 25.0 | 18.7 | 9.7 | 2.3 |
| 12 | 0.3 | 2.3 | 7.9 | 6.6 | 12.1 | 23.9 | 19.5 | 25.7 | 24.9 | 18.2 | 12.1 | 1.0 |
| 13 | 3.8 | 2.5 | 3.9 | 7.2 | 10.9 | 21.3 | 20.2 | 25.8 | 27.0 | 17.5 | 10.0 | 2.1 |
| 14 | 3.6 | 3.0 | 3.2 | 11.9 | 10.7 | 19.4 | 21.1 | 27.6 | 26.6 | 19.5 | 9.3 | 1.8 |
| 15 | 5.0 | 5.4 | 4.7 | 15.2 | 13.9 | 18.5 | 25.2 | 27.6 | 22.3 | 21.6 | 9.2 | 1.6 |
| 16 | 5.2 | 2.9 | 8.6 | 12.8 | 13.3 | 18.2 | 25.5 | 25.4 | 20.4 | 18.3 | 8.0 | 3.4 |
| 17 | 5.1 | 5.7 | 9.7 | 14.2 | 13.9 | 19.4 | 27.1 | 24.8 | 20.8 | 17.1 | 6.0 | 2.9 |
| 18 | 5.9 | 4.0 | 11.3 | 10.7 | 16.9 | 20.3 | 27.7 | 26.1 | 24.0 | 16.3 | 6.4 | 1.0 |
| 19 | 4.8 | 2.9 | 7.0 | 11.9 | 20.6 | 22.8 | 25.7 | 27.9 | 25.7 | 16.8 | 7.0 | 1.3 |
| 20 | 4.3 | 6.3 | 4.7 | 10.7 | 17.4 | 23.2 | 24.0 | 28.2 | 23.2 | 16.8 | 5.3 | 3.2 |
| 21 | 4.1 | 3.7 | 8.1 | 13.5 | 18.7 | 24.2 | 25.8 | 28.5 | 22.4 | 17.3 | 5.4 | 2.2 |
| 22 | 3.4 | 4.3 | 10.3 | 13.0 | 19.2 | 22.0 | 22.4 | 27.9 | 21.4 | 15.1 | 6.9 | 1.7 |
| 23 | 0.8 | 8.0 | 9.7 | 13.4 | 17.7 | 22.5 | 21.8 | 26.6 | 23.6 | 15.2 | 8.3 | 2.8 |
| 24 | 2.9 | 4.6 | 8.5 | 11.1 | 15.8 | 25.4 | 22.9 | 23.0 | 22.0 | 15.6 | 10.1 | 1.2 |
| 25 | 4.7 | 2.3 | 5.1 | 13.6 | 14.4 | 26.2 | 25.2 | 23.8 | 20.1 | 15.7 | 8.2 | 1.3 |
| 26 | 1.6 | 2.2 | 5.9 | 14.4 | 15.1 | 26.7 | 24.5 | 27.2 | 20.3 | 13.6 | 8.5 | 2.0 |
| 27 | 3.4 | 1.8 | 9.6 | 14.5 | 17.7 | 26.1 | 28.8 | 26.3 | 18.7 | 14.0 | 9.0 | 2.2 |
| 28 | 3.4 | 4.3 | 8.5 | 18.8 | 18.8 | 27.2 | 26.3 | 23.8 | 18.5 | 14.9 | 9.7 | 2.1 |
| 29 | 4.9 | ... | 9.8 | 21.7 | 16.4 | 23.1 | 27.4 | 24.6 | 18.6 | 16.0 | 10.6 | 2.1 |
| 30 | 4.9 | ... | 8.3 | 16.9 | 17.2 | 23.7 | 27.3 | 25.2 | 18.3 | 15.5 | 8.8 | 1.3 |
| 31 | 3.9 | ... | 8.1 | ... | 17.8 | ... | 27.5 | 24.3 | ... | 12.6 | ... | 2.4 |
| MEAN | 3.3 | 3.6 | 6.4 | 12.9 | 15.7 | 21.5 | 23.9 | 26.6 | 23.3 | 17.6 | 10.0 | 3.0 |

ITEM AIR TEMPERATURE (29.5 m HEIGHT)
 INSTRUMENT PT RESISTANCE THERMOMETER (E-731)
 UNIT (° C)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|-----|-----|------|------|------|------|------|------|------|------|------|-----|
| 1 | 1.7 | 1.7 | 3.4 | 9.1 | 18.6 | 20.5 | 23.2 | 27.2 | 25.2 | 20.9 | 11.4 | 6.6 |
| 2 | 2.2 | 1.6 | 2.9 | 8.9 | 18.2 | 18.9 | 23.1 | 27.5 | 26.8 | 23.7 | 11.9 | 5.5 |
| 3 | 2.5 | 2.5 | 2.9 | 12.3 | 15.5 | 17.3 | 18.9 | 28.2 | 27.2 | 21.7 | 12.8 | 5.7 |
| 4 | 7.4 | 4.5 | 0.5 | 5.9 | 17.5 | 15.2 | 19.4 | 28.1 | 24.2 | 17.7 | 14.5 | 4.3 |
| 5 | 2.9 | 3.7 | 2.4 | 10.0 | 15.9 | 18.6 | 22.0 | 28.5 | 22.7 | 17.6 | 14.5 | 5.4 |
| 6 | 0.9 | 3.9 | 1.7 | 15.4 | 11.5 | 18.9 | 20.4 | 28.8 | 23.4 | 18.0 | 13.4 | 5.6 |
| 7 | 5.1 | 3.7 | 5.0 | 18.3 | 13.3 | 17.6 | 22.8 | 28.1 | 26.9 | 19.7 | 17.6 | 5.2 |
| 8 | 3.5 | 2.8 | 7.3 | 17.7 | 13.3 | 19.2 | 20.5 | 25.9 | 27.7 | 21.5 | 15.7 | 5.3 |
| 9 | 1.8 | 3.6 | 7.4 | 12.1 | 15.3 | 20.7 | 19.1 | 25.5 | 23.1 | 17.9 | 13.2 | 6.6 |
| 10 | 2.5 | 6.2 | 6.4 | 15.5 | 16.2 | 20.6 | 25.0 | 24.7 | 25.3 | 17.1 | 11.2 | 6.9 |
| 11 | 3.0 | 3.6 | 6.8 | 11.3 | 11.2 | 21.8 | 25.9 | 25.5 | 24.7 | 18.4 | 10.0 | 3.1 |
| 12 | 0.9 | 2.5 | 7.7 | 6.4 | 12.0 | 23.6 | 19.1 | 25.3 | 24.7 | 18.0 | 12.3 | 1.7 |
| 13 | 4.2 | 2.9 | 4.0 | 7.1 | 10.7 | 20.9 | 19.8 | 25.4 | 26.7 | 17.5 | 11.3 | 2.7 |
| 14 | 4.2 | 3.3 | 3.6 | 11.6 | 10.4 | 18.9 | 20.7 | 27.1 | 26.2 | 19.3 | 9.6 | 2.6 |
| 15 | 4.9 | 5.3 | 5.2 | 15.0 | 13.6 | 18.1 | 24.7 | 27.1 | 22.0 | 21.2 | 9.1 | 2.5 |
| 16 | 5.2 | 2.8 | 8.6 | 12.6 | 13.3 | 17.9 | 25.1 | 25.0 | 20.3 | 18.0 | 8.6 | 4.0 |
| 17 | 5.5 | 5.8 | 9.6 | 14.3 | 13.6 | 19.0 | 26.7 | 24.5 | 21.0 | 16.9 | 6.8 | 3.4 |
| 18 | 6.1 | 4.0 | 11.1 | 10.4 | 16.6 | 19.9 | 27.4 | 25.6 | 24.2 | 16.2 | 7.0 | 1.2 |
| 19 | 4.9 | 2.9 | 7.0 | 11.7 | 20.2 | 22.4 | 25.4 | 27.5 | 25.5 | 16.6 | 7.6 | 1.8 |
| 20 | 4.5 | 6.3 | 5.1 | 10.5 | 17.3 | 22.8 | 23.9 | 27.9 | 22.9 | 16.8 | 6.5 | 4.2 |
| 21 | 4.0 | 3.8 | 8.0 | 13.3 | 19.1 | 23.8 | 25.4 | 28.0 | 22.0 | 17.1 | 6.4 | 2.8 |
| 22 | 3.5 | 4.6 | 10.2 | 12.8 | 18.9 | 21.7 | 21.9 | 27.4 | 21.1 | 15.1 | 7.2 | 1.8 |
| 23 | 1.1 | 8.3 | 9.5 | 13.3 | 17.5 | 22.2 | 21.3 | 26.1 | 23.2 | 15.5 | 8.6 | 3.3 |
| 24 | 3.3 | 4.9 | 8.4 | 10.9 | 15.5 | 25.1 | 22.5 | 22.6 | 21.6 | 16.0 | 10.5 | 1.9 |
| 25 | 5.1 | 2.3 | 5.1 | 13.4 | 14.1 | 25.8 | 24.7 | 23.4 | 19.8 | 15.9 | 8.8 | 2.5 |
| 26 | 2.1 | 2.3 | 6.2 | 14.5 | 15.0 | 26.4 | 24.1 | 26.8 | 20.0 | 13.5 | 8.8 | 2.4 |
| 27 | 4.1 | 2.0 | 10.0 | 14.8 | 17.4 | 25.8 | 28.7 | 25.9 | 18.3 | 13.9 | 9.7 | 2.2 |
| 28 | 3.7 | 4.3 | 8.4 | 18.7 | 18.4 | 26.9 | 25.9 | 23.4 | 18.2 | 15.0 | 10.7 | 2.2 |
| 29 | 5.6 | ... | 9.6 | 21.4 | 15.9 | 22.8 | 26.9 | 24.3 | 18.4 | 16.0 | 11.2 | 2.4 |
| 30 | 4.8 | ... | 8.4 | 16.7 | 16.9 | 23.3 | 26.8 | 25.0 | 18.4 | 15.4 | 9.3 | 2.5 |
| 31 | 3.9 | ... | 8.3 | ... | 17.6 | ... | 27.0 | 24.0 | ... | 12.8 | ... | 2.7 |
| MEAN | 3.7 | 3.8 | 6.5 | 12.9 | 15.5 | 21.2 | 23.5 | 26.1 | 23.0 | 17.4 | 10.5 | 3.6 |

ITEM SOIL TEMPERATURE (0.02 m DEPTH)
 INSTRUMENT PT RESISTANCE THERMOMETER (C-PG-10)
 UNIT (° C)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|-----|-----|------|------|------|------|------|------|------|------|------|-----|
| 1 | 4.0 | 3.6 | 4.0 | 8.9 | 17.3 | 20.2 | 23.3 | 27.9 | 25.1 | 19.7 | 12.6 | 7.1 |
| 2 | 3.6 | 2.9 | 4.0 | 9.7 | 19.1 | 19.2 | 23.8 | 28.2 | 25.7 | 21.2 | 12.2 | 6.6 |
| 3 | 3.3 | 2.6 | 4.2 | 12.0 | 18.2 | 19.5 | 21.5 | 28.6 | 26.0 | 21.6 | 13.2 | 6.4 |
| 4 | 3.9 | 2.7 | 4.1 | 9.5 | 18.0 | 18.2 | 20.3 | 29.2 | 25.3 | 20.2 | 13.6 | 5.6 |
| 5 | 4.3 | 2.7 | 3.4 | 9.4 | 17.3 | 20.1 | 22.5 | 29.3 | 24.7 | 19.8 | 13.3 | 6.6 |
| 6 | 3.6 | 2.9 | 3.3 | 12.1 | 14.4 | 20.3 | 21.2 | 29.1 | 24.6 | 20.0 | 13.6 | 6.3 |
| 7 | 4.0 | 2.9 | 3.5 | 14.5 | 14.9 | 19.8 | 22.0 | 28.9 | 25.8 | 20.2 | 15.6 | 5.8 |
| 8 | 4.2 | 3.6 | 4.1 | 14.6 | 14.5 | 19.9 | 21.9 | 27.3 | 26.5 | 21.6 | 13.7 | 5.9 |
| 9 | 3.6 | 3.8 | 5.0 | 13.4 | 17.9 | 19.8 | 20.9 | 27.7 | 24.5 | 20.3 | 12.5 | 5.4 |
| 10 | 3.3 | 4.5 | 5.3 | 15.0 | 17.7 | 20.2 | 22.9 | 26.6 | 25.4 | 19.5 | 11.6 | 5.2 |
| 11 | 3.0 | 4.5 | 5.5 | 12.3 | 14.4 | 21.8 | 24.1 | 27.5 | 25.3 | 19.7 | 11.0 | 4.4 |
| 12 | 2.6 | 3.8 | 6.3 | 9.4 | 14.3 | 23.1 | 21.8 | 26.8 | 25.2 | 19.1 | 12.7 | 4.2 |
| 13 | 2.7 | 3.7 | 5.9 | 9.3 | 12.9 | 22.5 | 21.2 | 26.5 | 25.4 | 18.2 | 10.9 | 3.5 |
| 14 | 2.9 | 3.3 | 4.9 | 13.0 | 14.8 | 20.9 | 21.4 | 28.2 | 25.8 | 19.4 | 10.6 | 2.6 |
| 15 | 3.7 | 3.6 | 4.6 | 14.6 | 15.9 | 19.6 | 23.3 | 28.6 | 23.9 | 20.8 | 11.4 | 2.6 |
| 16 | 4.7 | 4.1 | 5.2 | 13.7 | 16.0 | 19.6 | 23.8 | 27.7 | 22.2 | 19.8 | 10.2 | 2.8 |
| 17 | 4.4 | 4.5 | 6.1 | 13.8 | 16.3 | 20.3 | 24.4 | 27.1 | 21.4 | 18.9 | 8.3 | 2.9 |
| 18 | 4.2 | 4.6 | 6.9 | 13.8 | 16.9 | 21.2 | 24.6 | 27.1 | 22.4 | 17.7 | 7.9 | 2.7 |
| 19 | 4.4 | 4.4 | 6.6 | 14.6 | 19.9 | 22.3 | 23.7 | 27.8 | 23.4 | 17.5 | 7.9 | 1.9 |
| 20 | 4.2 | 4.7 | 5.7 | 12.3 | 18.6 | 22.5 | 22.0 | 28.0 | 23.2 | 17.1 | 6.9 | 1.9 |
| 21 | 3.9 | 5.2 | 5.7 | 14.5 | 18.7 | 23.0 | 23.1 | 28.3 | 22.9 | 17.9 | 6.8 | 2.6 |
| 22 | 3.7 | 4.6 | 8.2 | 13.1 | 19.5 | 21.9 | 23.3 | 27.6 | 22.3 | 17.0 | 7.5 | 2.6 |
| 23 | 3.1 | 4.4 | 10.0 | 13.1 | 19.5 | 22.1 | 23.0 | 27.3 | 23.2 | 16.4 | 8.1 | 2.8 |
| 24 | 3.3 | 4.4 | 9.3 | 13.9 | 18.4 | 23.5 | 23.4 | 25.2 | 22.7 | 15.6 | 9.3 | 2.2 |
| 25 | 3.5 | 3.9 | 7.1 | 13.7 | 18.1 | 24.2 | 25.4 | 24.8 | 21.4 | 15.7 | 8.4 | 1.7 |
| 26 | 3.8 | 3.7 | 6.3 | 14.4 | 17.9 | 24.2 | 24.3 | 25.7 | 21.3 | 15.3 | 8.5 | 1.6 |
| 27 | 3.1 | 3.3 | 7.9 | 14.4 | 19.7 | 24.0 | 26.7 | 26.7 | 20.6 | 15.6 | 8.8 | 2.0 |
| 28 | 3.0 | 3.7 | 8.1 | 16.7 | 20.1 | 24.5 | 26.8 | 25.4 | 20.1 | 15.2 | 8.5 | 2.1 |
| 29 | 3.3 | ... | 9.7 | 19.0 | 19.6 | 23.3 | 27.2 | 25.9 | 19.6 | 16.3 | 9.3 | 2.0 |
| 30 | 4.1 | ... | 8.5 | 17.7 | 17.8 | 23.1 | 27.8 | 25.3 | 19.0 | 16.2 | 8.2 | 1.9 |
| 31 | 4.0 | ... | 8.6 | ... | 17.9 | ... | 28.0 | 25.4 | ... | 14.9 | ... | 2.1 |
| MEAN | 3.6 | 3.8 | 6.1 | 13.2 | 17.3 | 21.5 | 23.5 | 27.3 | 23.5 | 18.3 | 10.4 | 3.7 |

ITEM SOIL TEMPERATURE (0.10 m DEPTH)
 INSTRUMENT PT RESISTANCE THERMOMETER (C-PTG-10)
 UNIT (° C)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|-----|-----|-----|------|------|------|------|------|------|------|------|-----|
| 1 | 5.2 | 4.4 | 4.5 | 8.7 | 16.1 | 18.3 | 22.6 | 26.7 | 25.2 | 20.3 | 15.0 | 8.9 |
| 2 | 4.9 | 4.0 | 4.6 | 9.3 | 17.4 | 18.7 | 22.9 | 26.9 | 25.4 | 21.0 | 14.2 | 8.4 |
| 3 | 4.6 | 3.6 | 4.7 | 10.2 | 17.1 | 18.6 | 22.0 | 27.2 | 25.6 | 21.6 | 14.3 | 8.3 |
| 4 | 4.7 | 3.6 | 4.8 | 10.2 | 16.8 | 18.2 | 20.7 | 27.6 | 25.5 | 21.0 | 14.7 | 7.5 |
| 5 | 5.1 | 3.5 | 4.3 | 9.2 | 16.8 | 18.7 | 21.5 | 27.9 | 25.1 | 20.6 | 14.4 | 7.9 |
| 6 | 4.9 | 3.6 | 4.1 | 10.5 | 15.4 | 19.2 | 21.3 | 27.9 | 24.7 | 20.5 | 14.5 | 7.8 |
| 7 | 4.8 | 3.6 | 4.1 | 12.3 | 14.6 | 19.2 | 21.4 | 27.8 | 25.3 | 20.4 | 15.6 | 7.5 |
| 8 | 5.1 | 4.0 | 4.5 | 13.1 | 14.8 | 19.1 | 21.7 | 26.9 | 25.8 | 21.2 | 14.8 | 7.4 |
| 9 | 4.7 | 4.2 | 5.1 | 12.6 | 15.9 | 19.0 | 21.1 | 26.6 | 25.1 | 21.0 | 14.2 | 7.1 |
| 10 | 4.4 | 4.6 | 5.5 | 13.3 | 16.6 | 19.3 | 21.7 | 26.4 | 25.0 | 20.3 | 13.5 | 6.9 |
| 11 | 4.2 | 4.9 | 5.7 | 12.9 | 15.3 | 20.1 | 22.8 | 26.6 | 25.3 | 20.2 | 12.8 | 6.4 |
| 12 | 3.9 | 4.6 | 6.2 | 10.7 | 14.6 | 21.1 | 22.3 | 26.4 | 25.1 | 19.9 | 13.5 | 6.1 |
| 13 | 3.7 | 4.4 | 6.3 | 10.1 | 14.0 | 21.3 | 21.4 | 25.8 | 25.1 | 19.3 | 12.7 | 5.7 |
| 14 | 3.7 | 4.1 | 5.7 | 11.3 | 14.2 | 20.6 | 21.3 | 26.8 | 25.5 | 19.5 | 12.2 | 5.0 |
| 15 | 4.1 | 4.1 | 5.3 | 12.9 | 15.0 | 19.8 | 22.1 | 27.5 | 24.8 | 20.5 | 12.6 | 4.7 |
| 16 | 4.9 | 4.5 | 5.4 | 13.2 | 15.2 | 19.5 | 22.8 | 27.3 | 23.5 | 20.4 | 12.1 | 4.7 |
| 17 | 4.8 | 4.7 | 6.2 | 12.8 | 15.5 | 19.6 | 23.3 | 26.7 | 22.5 | 19.7 | 10.9 | 4.6 |
| 18 | 4.8 | 5.1 | 6.8 | 13.3 | 15.8 | 20.1 | 23.5 | 26.6 | 22.8 | 18.8 | 10.2 | 4.6 |
| 19 | 4.8 | 4.9 | 6.9 | 13.6 | 17.3 | 20.9 | 23.4 | 27.0 | 23.3 | 18.5 | 10.1 | 4.1 |
| 20 | 4.8 | 5.0 | 6.4 | 12.8 | 17.5 | 21.3 | 22.3 | 27.2 | 23.5 | 18.1 | 9.4 | 3.8 |
| 21 | 4.7 | 5.4 | 6.1 | 13.4 | 17.2 | 21.6 | 22.5 | 27.4 | 23.2 | 18.4 | 9.0 | 4.0 |
| 22 | 4.5 | 5.2 | 8.0 | 13.1 | 17.9 | 21.4 | 22.9 | 27.2 | 22.8 | 18.2 | 9.1 | 4.1 |
| 23 | 4.2 | 5.0 | 9.9 | 12.8 | 18.1 | 21.3 | 22.7 | 27.0 | 23.0 | 17.7 | 9.4 | 4.2 |
| 24 | 4.1 | 5.0 | 9.1 | 13.3 | 17.6 | 22.0 | 22.8 | 25.6 | 23.1 | 16.9 | 10.1 | 3.9 |
| 25 | 4.2 | 4.8 | 8.2 | 13.3 | 17.5 | 22.6 | 23.9 | 25.2 | 22.4 | 16.9 | 9.8 | 3.6 |
| 26 | 4.4 | 4.4 | 7.2 | 13.9 | 17.2 | 22.9 | 23.9 | 25.4 | 21.9 | 16.6 | 9.7 | 3.4 |
| 27 | 4.1 | 4.2 | 7.6 | 13.5 | 18.0 | 22.9 | 25.0 | 26.1 | 21.6 | 16.7 | 9.9 | 3.4 |
| 28 | 3.9 | 4.2 | 8.3 | 14.9 | 18.7 | 23.2 | 25.5 | 25.7 | 21.1 | 16.2 | 9.6 | 3.5 |
| 29 | 3.9 | ... | 8.9 | 16.4 | 18.6 | 22.9 | 25.8 | 25.7 | 20.7 | 16.8 | 10.1 | 3.5 |
| 30 | 4.4 | ... | 8.7 | 16.6 | 17.8 | 22.3 | 26.4 | 25.4 | 20.2 | 16.9 | 9.7 | 3.4 |
| 31 | 4.5 | ... | 8.6 | ... | 17.5 | ... | 26.6 | 25.5 | ... | 16.4 | ... | 3.4 |
| MEAN | 4.5 | 4.4 | 6.4 | 12.5 | 16.5 | 20.5 | 22.9 | 26.6 | 23.8 | 19.0 | 11.9 | 5.4 |

ITEM SOIL TEMPERATURE (0.50 m DEPTH)
 INSTRUMENT PT RESISTANCE THERMOMETER (C-PTG-10)
 UNIT (° C)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|-----|-----|-----|------|------|------|------|------|------|------|------|------|
| 1 | *** | *** | *** | 8.7 | 13.3 | 16.1 | 19.9 | 22.7 | 24.4 | 21.7 | 18.2 | 12.4 |
| 2 | *** | *** | *** | 8.7 | 13.6 | 16.2 | 20.0 | 22.9 | 24.3 | 21.5 | 17.9 | 12.3 |
| 3 | *** | *** | *** | 8.8 | 13.9 | 16.3 | 20.1 | 23.1 | 24.3 | 21.5 | 17.6 | 12.0 |
| 4 | *** | *** | *** | 9.0 | 14.2 | 16.5 | 20.2 | 23.3 | 24.3 | 21.5 | 17.3 | 11.8 |
| 5 | *** | *** | *** | 9.2 | 14.3 | 16.5 | 20.1 | 23.5 | 24.2 | 21.4 | 17.1 | 11.6 |
| 6 | *** | *** | *** | 9.3 | 14.4 | 16.6 | 20.1 | 23.7 | 24.2 | 21.3 | 17.0 | 11.4 |
| 7 | *** | *** | *** | 9.4 | 14.4 | 16.8 | 20.1 | 23.9 | 24.1 | 21.2 | 16.8 | 11.3 |
| 8 | *** | *** | *** | 9.8 | 14.3 | 16.9 | 20.1 | 24.1 | 24.1 | 21.1 | 16.7 | 11.1 |
| 9 | *** | *** | *** | 10.2 | 14.2 | 17.0 | 20.1 | 24.3 | 24.1 | 21.1 | 16.7 | 10.9 |
| 10 | *** | *** | *** | 10.5 | 14.3 | 17.1 | 20.1 | 24.2 | 24.1 | 21.1 | 16.5 | 10.8 |
| 11 | *** | *** | *** | 10.8 | 14.4 | 17.2 | 20.1 | 24.2 | 24.0 | 21.0 | 16.3 | 10.6 |
| 12 | *** | *** | *** | 11.0 | 14.4 | 17.4 | 20.3 | 24.2 | 24.0 | 20.9 | 16.1 | 10.4 |
| 13 | *** | *** | *** | 10.9 | 14.3 | 17.6 | 20.4 | 24.6 | 24.0 | 20.8 | 15.9 | 10.2 |
| 14 | *** | *** | *** | 10.8 | 14.2 | 17.8 | 20.3 | 24.5 | 24.0 | 20.6 | 15.7 | 9.9 |
| 15 | *** | *** | *** | 10.7 | 14.1 | 18.0 | 20.3 | 24.5 | 24.0 | 20.5 | 15.5 | 9.7 |
| 16 | *** | *** | *** | 11.0 | 14.1 | 18.0 | 20.3 | 24.7 | 24.0 | 20.5 | 15.3 | 9.4 |
| 17 | *** | *** | *** | 11.2 | 14.1 | 18.0 | 20.5 | 24.7 | 23.7 | 20.6 | 15.1 | 9.2 |
| 18 | *** | *** | *** | 11.4 | 14.2 | 18.0 | 20.6 | 24.7 | 23.5 | 20.4 | 14.8 | 9.0 |
| 19 | *** | *** | *** | 11.5 | 14.3 | 18.1 | 20.8 | 24.7 | 23.3 | 20.2 | 14.5 | 8.8 |
| 20 | *** | *** | *** | 11.7 | 14.5 | 18.2 | 20.9 | 24.7 | 23.2 | 20.0 | 14.2 | 8.6 |
| 21 | *** | *** | *** | 11.8 | 14.8 | 18.4 | 20.9 | 24.8 | 23.1 | 19.8 | 13.9 | 8.4 |
| 22 | *** | *** | *** | 11.9 | 14.9 | 18.6 | 20.9 | 24.8 | 23.1 | 19.7 | 13.5 | 8.2 |
| 23 | *** | *** | 8.8 | 12.0 | 15.1 | 18.7 | 20.9 | 24.8 | 22.9 | 19.6 | 13.3 | 8.1 |
| 24 | *** | *** | 8.8 | 12.0 | 15.3 | 18.8 | 20.9 | 24.9 | 22.9 | 19.4 | 13.1 | 8.0 |
| 25 | *** | *** | 8.8 | 12.1 | 15.5 | 19.0 | 21.0 | 24.8 | 22.8 | 19.2 | 13.0 | 7.9 |
| 26 | *** | *** | 8.7 | 12.2 | 15.5 | 19.2 | 21.3 | 24.8 | 22.7 | 19.0 | 12.9 | 7.7 |
| 27 | *** | *** | 8.5 | 12.4 | 15.6 | 19.4 | 21.6 | 24.7 | 22.5 | 18.8 | 12.8 | 7.6 |
| 28 | *** | *** | 8.4 | 12.4 | 15.7 | 19.6 | 21.8 | 24.6 | 22.4 | 18.6 | 12.7 | 7.4 |
| 29 | *** | ... | 8.4 | 12.6 | 15.9 | 19.8 | 22.0 | 24.6 | 22.2 | 18.4 | 12.5 | 7.3 |
| 30 | *** | ... | 8.5 | 13.0 | 16.0 | 19.9 | 22.2 | 24.5 | 21.9 | 18.3 | 12.5 | 7.2 |
| 31 | *** | ... | 8.6 | ... | 16.1 | ... | 22.5 | 24.4 | ... | 18.3 | ... | 7.1 |
| MEAN | *** | *** | 8.6 | 10.9 | 14.6 | 17.8 | 20.7 | 24.3 | 23.5 | 20.3 | 15.2 | 9.6 |

ITEM SOIL TEMPERATURE (1.00 m DEPTH)
 INSTRUMENT PT RESISTANCE THERMOMETER (C-PTG-10)
 UNIT (° C)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|------|-----|-----|------|------|------|------|------|------|------|------|------|
| 1 | 12.5 | 9.6 | 8.8 | 9.5 | 11.7 | 14.0 | 16.5 | 18.7 | 21.5 | 20.8 | 18.9 | 15.3 |
| 2 | 12.4 | 9.6 | 8.7 | 9.5 | 11.8 | 14.1 | 16.6 | 18.8 | 21.5 | 20.8 | 18.8 | 15.2 |
| 3 | 12.2 | 9.6 | 8.7 | 9.6 | 12.0 | 14.2 | 16.7 | 18.9 | 21.5 | 20.7 | 18.7 | 15.1 |
| 4 | 12.1 | 9.5 | 8.7 | 9.6 | 12.1 | 14.3 | 16.8 | 19.0 | 21.5 | 20.6 | 18.6 | 15.0 |
| 5 | 12.0 | 9.5 | 8.7 | 9.6 | 12.2 | 14.3 | 16.9 | 19.1 | 21.4 | 20.5 | 18.5 | 14.9 |
| 6 | 11.9 | 9.4 | 8.6 | 9.7 | 12.3 | 14.4 | 17.0 | 19.3 | 21.4 | 20.4 | 18.4 | 14.8 |
| 7 | 11.8 | 9.4 | 8.6 | 9.7 | 12.5 | 14.5 | 17.2 | 19.4 | 21.4 | 20.4 | 18.2 | 14.6 |
| 8 | 11.7 | 9.3 | 8.6 | 9.8 | 12.6 | 14.6 | 17.2 | 19.5 | 21.4 | 20.3 | 18.1 | 14.5 |
| 9 | 11.6 | 9.3 | 8.5 | 9.9 | 12.7 | 14.6 | 17.3 | 19.8 | 21.4 | 20.3 | 18.0 | 14.4 |
| 10 | 11.5 | 9.2 | 8.5 | 9.9 | 12.8 | 14.7 | 17.4 | 20.0 | 21.4 | 20.2 | 17.9 | 14.3 |
| 11 | 11.4 | 9.2 | 8.5 | 10.1 | 12.8 | 14.8 | 17.4 | 20.0 | 21.4 | 20.2 | 17.8 | 14.2 |
| 12 | 11.3 | 9.2 | 8.5 | 10.2 | 12.9 | 14.9 | 17.5 | 20.1 | 21.4 | 20.2 | 17.7 | 14.0 |
| 13 | 11.2 | 9.1 | 8.5 | 10.3 | 12.9 | 14.9 | 17.5 | 20.5 | 21.4 | 20.1 | 17.6 | 13.9 |
| 14 | 11.1 | 9.1 | 8.5 | 10.4 | 13.0 | 15.0 | 17.6 | 20.7 | 21.4 | 20.1 | 17.5 | 13.8 |
| 15 | 11.0 | 9.1 | 8.5 | 10.5 | 13.0 | 15.1 | 17.6 | 20.7 | 21.4 | 20.0 | 17.4 | 13.7 |
| 16 | 9.6 | 9.1 | 8.5 | 10.5 | 13.1 | 15.2 | 17.6 | 20.8 | 21.4 | 20.0 | 17.3 | 13.5 |
| 17 | 9.3 | 9.0 | 8.5 | 10.6 | 13.1 | 15.3 | 17.7 | 20.8 | 21.4 | 20.0 | 17.2 | 13.4 |
| 18 | 9.6 | 9.0 | 8.6 | 10.7 | 13.1 | 15.4 | 17.7 | 20.9 | 21.4 | 20.0 | 17.1 | 13.2 |
| 19 | 9.7 | 9.0 | 8.6 | 10.8 | 13.1 | 15.5 | 17.8 | 20.9 | 21.4 | 19.9 | 16.9 | 13.1 |
| 20 | 9.8 | 8.9 | 8.6 | 10.9 | 13.2 | 15.5 | 17.8 | 21.0 | 21.3 | 19.9 | 16.8 | 13.0 |
| 21 | 9.9 | 8.9 | 8.6 | 10.9 | 13.2 | 15.6 | 17.9 | 21.0 | 21.3 | 19.8 | 16.7 | 12.8 |
| 22 | 9.9 | 8.9 | 9.0 | 11.0 | 13.3 | 15.7 | 17.9 | 21.0 | 21.3 | 19.8 | 16.5 | 12.7 |
| 23 | 10.0 | 8.9 | 9.4 | 11.1 | 13.3 | 15.8 | 18.0 | 21.1 | 21.2 | 19.7 | 16.4 | 12.5 |
| 24 | 9.9 | 8.9 | 9.4 | 11.2 | 13.4 | 15.9 | 18.0 | 21.1 | 21.1 | 19.6 | 16.2 | 12.4 |
| 25 | 9.9 | 8.9 | 9.4 | 11.3 | 13.5 | 15.9 | 18.1 | 21.2 | 21.1 | 19.5 | 16.1 | 12.3 |
| 26 | 9.9 | 8.9 | 9.4 | 11.3 | 13.6 | 16.0 | 18.1 | 21.5 | 21.1 | 19.4 | 15.9 | 12.1 |
| 27 | 9.9 | 8.8 | 9.4 | 11.4 | 13.7 | 16.1 | 18.3 | 21.5 | 21.0 | 19.3 | 15.8 | 12.0 |
| 28 | 9.8 | 8.8 | 9.4 | 11.5 | 13.7 | 16.2 | 18.4 | 21.6 | 21.0 | 19.2 | 15.7 | 11.9 |
| 29 | 9.8 | ... | 9.4 | 11.6 | 13.8 | 16.3 | 18.5 | 21.5 | 21.0 | 19.1 | 15.5 | 11.8 |
| 30 | 9.7 | ... | 9.5 | 11.6 | 13.9 | 16.4 | 18.5 | 21.5 | 20.9 | 19.0 | 15.4 | 11.7 |
| 31 | 9.7 | ... | 9.5 | ... | 14.0 | ... | 18.6 | 21.5 | ... | 19.0 | ... | 11.6 |
| MEAN | 10.7 | 9.1 | 8.8 | 10.5 | 13.0 | 15.2 | 17.6 | 20.4 | 21.3 | 20.0 | 17.3 | 13.5 |

ITEM GROUND WATER LEVEL (2.2 m DEPTH)
 INSTRUMENT WATER LEVEL GAUGE (PRESSURE TRANSDUCER TYPE)
 UNIT (m)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|-----|-----|
| 1 | -1.78 | -1.68 | -1.73 | -1.68 | -1.73 | -2.03 | -2.24 | *** | *** | *** | *** | *** |
| 2 | -1.74 | -1.70 | -1.74 | -1.70 | -1.72 | -2.04 | -2.25 | *** | *** | *** | *** | *** |
| 3 | -1.72 | -1.71 | -1.75 | -1.71 | -1.68 | -2.05 | -2.25 | *** | *** | *** | *** | *** |
| 4 | -1.71 | -1.72 | -1.76 | -1.73 | -1.68 | -2.06 | -2.25 | *** | *** | *** | *** | *** |
| 5 | -1.72 | -1.73 | -1.77 | -1.73 | -1.70 | -2.07 | -2.25 | *** | *** | *** | *** | *** |
| 6 | -1.73 | -1.74 | -1.74 | -1.73 | -1.72 | -2.08 | -2.24 | *** | *** | *** | *** | *** |
| 7 | -1.74 | -1.75 | -1.71 | -1.73 | -1.73 | -2.09 | -2.21 | *** | *** | *** | *** | *** |
| 8 | -1.76 | -1.76 | -1.70 | -1.74 | -1.71 | -2.10 | -2.13 | *** | *** | *** | *** | *** |
| 9 | -1.76 | -1.76 | -1.71 | -1.75 | -1.70 | -2.10 | -2.05 | *** | *** | *** | *** | *** |
| 10 | -1.78 | -1.77 | -1.72 | -1.76 | -1.72 | -2.11 | -1.99 | *** | *** | *** | *** | *** |
| 11 | -1.79 | -1.78 | -1.73 | -1.77 | -1.73 | -2.12 | -1.91 | *** | *** | *** | *** | *** |
| 12 | -1.80 | -1.79 | -1.73 | -1.78 | -1.75 | -2.13 | -1.87 | *** | *** | *** | *** | *** |
| 13 | -1.81 | -1.80 | -1.72 | -1.79 | -1.77 | -2.13 | -1.86 | *** | *** | *** | *** | *** |
| 14 | -1.81 | -1.81 | -1.72 | -1.78 | -1.78 | -2.14 | -1.86 | *** | *** | *** | *** | *** |
| 15 | -1.82 | -1.81 | -1.73 | -1.76 | -1.80 | -2.15 | -1.86 | *** | *** | *** | *** | *** |
| 16 | -1.28 | -1.82 | -1.74 | -1.76 | -1.81 | -2.15 | -1.87 | *** | *** | *** | *** | *** |
| 17 | -1.06 | -1.83 | -1.75 | -1.77 | -1.83 | -2.16 | -1.88 | *** | *** | *** | *** | *** |
| 18 | -1.26 | -1.83 | -1.76 | -1.78 | -1.84 | -2.17 | -1.89 | *** | *** | *** | *** | *** |
| 19 | -1.36 | -1.83 | -1.78 | -1.79 | -1.85 | -2.17 | -1.91 | *** | *** | *** | *** | *** |
| 20 | -1.43 | -1.83 | -1.79 | -1.80 | -1.87 | -2.18 | -1.92 | *** | *** | *** | *** | *** |
| 21 | -1.48 | -1.81 | -1.80 | -1.80 | -1.88 | -2.18 | -1.93 | *** | *** | *** | *** | *** |
| 22 | -1.52 | -1.79 | -1.80 | -1.79 | -1.90 | -2.19 | *** | *** | *** | *** | *** | *** |
| 23 | -1.55 | *** | -1.80 | -1.78 | -1.91 | -2.20 | *** | *** | *** | *** | *** | *** |
| 24 | -1.57 | -1.79 | -1.71 | -1.78 | -1.93 | -2.20 | *** | *** | *** | *** | *** | *** |
| 25 | -1.59 | -1.79 | *** | -1.78 | -1.94 | -2.21 | *** | *** | *** | *** | *** | *** |
| 26 | -1.61 | -1.78 | *** | -1.78 | -1.95 | -2.22 | *** | *** | *** | *** | *** | *** |
| 27 | -1.63 | -1.76 | *** | -1.70 | -1.97 | -2.22 | *** | *** | *** | *** | *** | *** |
| 28 | -1.64 | -1.73 | *** | -1.68 | -1.98 | -2.23 | *** | *** | *** | *** | *** | *** |
| 29 | -1.65 | ... | *** | -1.70 | -2.00 | -2.23 | *** | *** | *** | *** | *** | *** |
| 30 | -1.66 | ... | *** | -1.72 | -2.01 | -2.24 | *** | *** | *** | *** | *** | *** |
| 31 | -1.67 | ... | -1.67 | ... | -2.02 | ... | *** | *** | ... | *** | ... | *** |
| MEAN | -1.63 | -1.77 | -1.74 | -1.75 | -1.83 | -2.15 | -2.03 | *** | *** | *** | *** | *** |

| ITEM | GROUND WATER LEVEL (10.0 m DEPTH) | | | | | | | | | | | |
|------------|--|-------|-------|-------|-------|-------|-------|-----|-----|-----|-----|-----|
| INSTRUMENT | WATER LEVEL GAUGE (PRESSURE TRANSDUCER TYPE) | | | | | | | | | | | |
| UNIT | (m) | | | | | | | | | | | |
| YEAR | 2005 | | | | | | | | | | | |
| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1 | -2.28 | -2.18 | -2.61 | -2.54 | -2.76 | -3.24 | -3.57 | *** | *** | *** | *** | *** |
| 2 | -2.27 | -2.19 | -2.62 | -2.56 | -2.71 | -3.27 | -3.64 | *** | *** | *** | *** | *** |
| 3 | -2.23 | -2.27 | -2.65 | -2.56 | -2.66 | -3.30 | -3.69 | *** | *** | *** | *** | *** |
| 4 | -2.21 | -2.24 | -2.65 | -2.59 | -2.71 | -3.32 | -3.72 | *** | *** | *** | *** | *** |
| 5 | -2.22 | -2.23 | -2.64 | -2.61 | -2.77 | -3.37 | -3.70 | *** | *** | *** | *** | *** |
| 6 | -2.23 | -2.22 | -2.60 | -2.62 | -2.83 | -3.41 | -3.64 | *** | *** | *** | *** | *** |
| 7 | -2.22 | -2.23 | -2.57 | -2.61 | -2.84 | -3.43 | -3.53 | *** | *** | *** | *** | *** |
| 8 | -2.23 | -2.23 | -2.47 | -2.62 | -2.84 | -3.45 | -3.55 | *** | *** | *** | *** | *** |
| 9 | -2.23 | -2.24 | -2.44 | -2.64 | -2.82 | -3.44 | -3.45 | *** | *** | *** | *** | *** |
| 10 | -2.25 | -2.24 | -2.48 | -2.65 | -2.84 | -3.13 | -3.46 | *** | *** | *** | *** | *** |
| 11 | -2.27 | -2.26 | -2.49 | -2.69 | -2.89 | -3.02 | -3.42 | *** | *** | *** | *** | *** |
| 12 | -2.29 | -2.31 | -2.49 | -2.75 | -2.89 | -2.96 | -3.38 | *** | *** | *** | *** | *** |
| 13 | -2.31 | -2.33 | -2.50 | -2.74 | -2.89 | -2.92 | -3.41 | *** | *** | *** | *** | *** |
| 14 | -2.33 | -2.35 | -2.52 | -2.75 | -2.91 | -2.94 | -3.50 | *** | *** | *** | *** | *** |
| 15 | -2.38 | -2.36 | -2.55 | -2.75 | -2.91 | -2.95 | -3.38 | *** | *** | *** | *** | *** |
| 16 | -2.01 | -2.31 | -2.56 | -2.74 | -2.93 | -2.95 | -3.24 | *** | *** | *** | *** | *** |
| 17 | -1.81 | -2.33 | -2.57 | -2.74 | -2.95 | -2.95 | -3.13 | *** | *** | *** | *** | *** |
| 18 | -1.90 | -2.36 | -2.57 | -2.76 | -2.95 | -2.95 | -2.97 | *** | *** | *** | *** | *** |
| 19 | -1.95 | -2.37 | -2.61 | -2.76 | -2.96 | -2.94 | -2.85 | *** | *** | *** | *** | *** |
| 20 | -1.99 | -2.35 | -2.62 | -2.80 | -2.99 | -2.92 | -2.81 | *** | *** | *** | *** | *** |
| 21 | -2.03 | -2.34 | -2.63 | -2.80 | -3.01 | -2.93 | -2.84 | *** | *** | *** | *** | *** |
| 22 | -2.09 | -2.33 | -2.64 | -2.79 | -3.02 | -2.96 | *** | *** | *** | *** | *** | *** |
| 23 | -2.13 | *** | -2.62 | -2.78 | -3.01 | -2.98 | *** | *** | *** | *** | *** | *** |
| 24 | -2.14 | -2.33 | -2.57 | -2.78 | -3.03 | -3.00 | *** | *** | *** | *** | *** | *** |
| 25 | -2.16 | -2.36 | *** | -2.79 | -3.04 | -3.02 | *** | *** | *** | *** | *** | *** |
| 26 | -2.19 | -2.42 | *** | -2.77 | -3.07 | -3.07 | *** | *** | *** | *** | *** | *** |
| 27 | -2.22 | -2.54 | *** | -2.75 | -3.10 | -3.11 | *** | *** | *** | *** | *** | *** |
| 28 | -2.21 | -2.59 | *** | -2.73 | -3.12 | -3.15 | *** | *** | *** | *** | *** | *** |
| 29 | -2.22 | ... | *** | -2.73 | -3.16 | -3.20 | *** | *** | *** | *** | *** | *** |
| 30 | -2.22 | ... | *** | -2.76 | -3.20 | -3.39 | *** | *** | *** | *** | *** | *** |
| 31 | -2.19 | ... | -2.52 | ... | -3.21 | ... | *** | *** | ... | *** | ... | *** |
| MEAN | -2.17 | -2.31 | -2.57 | -2.71 | -2.94 | -3.12 | -3.38 | *** | *** | *** | *** | *** |

| ITEM | GROUND WATER LEVEL (NEW: 2.0 m DEPTH) | | | | | | | | | | | |
|------------|--|-------|-------|-------|-------|-----|-------|-------|-------|-------|-------|-----|
| INSTRUMENT | WATER LEVEL GAUGE (PRESSURE TRANSDUCER TYPE) | | | | | | | | | | | |
| UNIT | (m) | | | | | | | | | | | |
| YEAR | 2005 | | | | | | | | | | | |
| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1 | -1.81 | -1.78 | -1.75 | -1.77 | -1.81 | *** | *** | -1.77 | -1.55 | *** | -1.77 | *** |
| 2 | -1.74 | -1.79 | -1.78 | -1.79 | -1.78 | *** | *** | -1.78 | -1.59 | *** | -1.78 | *** |
| 3 | -1.72 | -1.80 | -1.80 | -1.80 | -1.74 | *** | *** | -1.80 | -1.63 | *** | -1.79 | *** |
| 4 | -1.70 | -1.81 | -1.80 | -1.82 | -1.75 | *** | *** | -1.81 | -1.66 | *** | -1.81 | *** |
| 5 | -1.72 | -1.82 | -1.81 | -1.81 | -1.78 | *** | *** | -1.82 | -1.69 | *** | -1.82 | *** |
| 6 | -1.72 | -1.83 | -1.79 | -1.82 | -1.80 | *** | *** | -1.83 | -1.71 | *** | -1.84 | *** |
| 7 | -1.73 | -1.84 | -1.75 | -1.82 | -1.79 | *** | *** | -1.84 | -1.73 | *** | -1.78 | *** |
| 8 | -1.76 | -1.85 | -1.74 | -1.83 | -1.77 | *** | *** | -1.81 | -1.75 | *** | -1.73 | *** |
| 9 | -1.78 | -1.86 | -1.76 | -1.84 | -1.77 | *** | -1.92 | -1.65 | -1.77 | *** | -1.74 | *** |
| 10 | -1.80 | -1.87 | -1.77 | -1.86 | -1.79 | *** | -1.88 | -1.66 | -1.79 | *** | -1.76 | *** |
| 11 | -1.80 | -1.88 | -1.78 | -1.87 | -1.82 | *** | -1.83 | -1.70 | -1.81 | *** | -1.78 | *** |
| 12 | -1.80 | -1.89 | -1.78 | -1.88 | -1.83 | *** | -1.81 | -1.63 | -1.82 | *** | -1.79 | *** |
| 13 | -1.82 | -1.90 | -1.76 | -1.88 | -1.85 | *** | -1.81 | -0.57 | -1.84 | *** | -1.81 | *** |
| 14 | -1.83 | -1.91 | -1.75 | -1.86 | -1.87 | *** | -1.82 | -0.94 | -1.86 | *** | -1.82 | *** |
| 15 | -1.86 | -1.92 | -1.78 | -1.84 | -1.89 | *** | -1.83 | -1.20 | -1.88 | *** | -1.83 | *** |
| 16 | -1.33 | -1.91 | -1.80 | -1.84 | -1.91 | *** | -1.84 | -1.33 | -1.90 | -1.86 | -1.85 | *** |
| 17 | -0.89 | -1.91 | -1.81 | -1.86 | -1.93 | *** | -1.85 | -1.41 | -1.92 | -1.65 | -1.86 | *** |
| 18 | -1.17 | -1.92 | -1.82 | -1.87 | *** | *** | -1.86 | -1.47 | -1.94 | -1.01 | -1.87 | *** |
| 19 | -1.24 | -1.91 | -1.84 | -1.89 | *** | *** | -1.88 | -1.52 | *** | -1.07 | -1.88 | *** |
| 20 | -1.31 | -1.90 | -1.84 | -1.90 | *** | *** | -1.89 | -1.56 | *** | -1.26 | -1.89 | *** |
| 21 | -1.42 | -1.87 | -1.86 | -1.89 | *** | *** | -1.91 | -1.61 | *** | -1.37 | -1.91 | *** |
| 22 | -1.53 | -1.86 | -1.89 | -1.87 | *** | *** | -1.92 | -1.64 | *** | -1.45 | -1.92 | *** |
| 23 | -1.56 | -1.86 | -1.90 | -1.86 | *** | *** | -1.93 | -1.67 | *** | -1.51 | -1.93 | *** |
| 24 | -1.61 | -1.86 | -1.80 | -1.86 | *** | *** | *** | -1.62 | *** | -1.56 | *** | *** |
| 25 | -1.67 | -1.86 | -1.74 | -1.87 | *** | *** | *** | -1.59 | *** | -1.60 | *** | *** |
| 26 | -1.69 | -1.84 | -1.72 | -1.87 | *** | *** | *** | -0.84 | *** | -1.64 | *** | *** |
| 27 | -1.71 | -1.79 | -1.74 | -1.77 | *** | *** | -1.74 | -1.05 | *** | -1.66 | *** | *** |
| 28 | -1.73 | -1.73 | -1.75 | -1.75 | *** | *** | -1.69 | -1.25 | *** | -1.69 | *** | *** |
| 29 | -1.74 | ... | -1.75 | -1.77 | *** | *** | -1.71 | -1.37 | *** | -1.71 | *** | *** |
| 30 | -1.75 | ... | -1.74 | -1.79 | *** | *** | -1.73 | -1.44 | *** | -1.73 | *** | *** |
| 31 | -1.76 | ... | -1.75 | ... | *** | ... | -1.75 | -1.51 | ... | -1.75 | ... | *** |
| MEAN | -1.64 | -1.86 | -1.78 | -1.84 | -1.82 | *** | -1.83 | -1.51 | -1.77 | -1.53 | -1.82 | *** |

ITEM DEW-POINT TEMPERATURE (1.6 m HEIGHT)
 INSTRUMENT DEW-POINT HYGROMETER (LiCl DEW CELL) (E-771)
 UNIT (° C)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 1 | -3.2 | -6.7 | -5.5 | -3.1 | 12.8 | 14.9 | 22.0 | 23.4 | 19.9 | 15.1 | 4.8 | -2.0 |
| 2 | -4.9 | -7.4 | -5.2 | 1.0 | 12.9 | 16.1 | 20.8 | 23.9 | 21.2 | 18.4 | 6.9 | 0.6 |
| 3 | -2.9 | -7.4 | -1.7 | 5.2 | 3.7 | 15.7 | 16.5 | 23.9 | 21.4 | 16.0 | 9.0 | -2.1 |
| 4 | -0.4 | -6.6 | 0.0 | 2.7 | 10.1 | 13.8 | 18.8 | 24.2 | 22.1 | 16.5 | 9.3 | 0.5 |
| 5 | -6.3 | -6.9 | -0.1 | 2.2 | 5.5 | 14.8 | 20.1 | 23.2 | 21.2 | 16.7 | 9.2 | -1.4 |
| 6 | -2.9 | -7.2 | -1.5 | 5.7 | 5.9 | 13.9 | 18.7 | 22.8 | 22.5 | 16.0 | 11.2 | 0.7 |
| 7 | -0.2 | -4.4 | -1.9 | 10.0 | 11.5 | 14.2 | 19.4 | 23.3 | 23.7 | 16.8 | 11.0 | -1.0 |
| 8 | -6.1 | 2.0 | -0.1 | 3.9 | 8.5 | 14.2 | 17.2 | 22.7 | 22.1 | 20.5 | 5.3 | 0.1 |
| 9 | -6.2 | 1.4 | 1.6 | 2.7 | 11.3 | 16.5 | 18.0 | 22.8 | 18.9 | 16.2 | 3.0 | -1.5 |
| 10 | -6.5 | 0.2 | 1.7 | 10.0 | 4.1 | 18.8 | 22.3 | 22.9 | 22.0 | 15.9 | 5.7 | -2.2 |
| 11 | -4.6 | -7.7 | 5.2 | 8.8 | 5.4 | 19.1 | 22.7 | 22.4 | 22.7 | 14.8 | 6.9 | -3.8 |
| 12 | -6.7 | -7.8 | 1.6 | 4.4 | 7.8 | 19.2 | 17.4 | 23.5 | 21.3 | 12.4 | 6.5 | -4.2 |
| 13 | -7.1 | -4.1 | -9.4 | 6.2 | 6.6 | 17.4 | 16.8 | 23.2 | 22.7 | 12.4 | 4.6 | -6.5 |
| 14 | -3.5 | -6.5 | -7.4 | 6.1 | 5.9 | 16.4 | 19.8 | 23.2 | 22.7 | 15.6 | 6.5 | -6.7 |
| 15 | 2.8 | -3.5 | -3.0 | 7.8 | 8.1 | 16.7 | 22.5 | 24.1 | 18.0 | *** | 4.6 | -5.9 |
| 16 | 3.4 | 1.1 | -0.1 | 4.9 | 3.3 | 16.1 | 23.4 | 22.4 | 15.1 | *** | 3.1 | -5.3 |
| 17 | -1.2 | 2.1 | 5.7 | 5.6 | 8.5 | 16.6 | 24.0 | 20.7 | 15.4 | *** | 0.1 | -6.2 |
| 18 | -2.4 | -1.8 | -0.6 | 0.8 | 12.5 | 18.2 | 23.3 | 23.3 | 18.1 | 14.3 | 0.9 | -10.2 |
| 19 | 0.9 | 1.7 | -6.1 | 5.0 | 14.6 | 19.2 | 20.0 | 23.6 | 20.9 | 12.4 | -0.5 | -7.8 |
| 20 | -2.4 | 3.4 | -2.0 | 8.2 | 6.5 | 19.3 | 17.0 | 23.7 | 19.8 | 11.1 | -0.6 | -5.2 |
| 21 | -4.9 | -2.1 | -3.4 | 10.2 | 9.8 | 19.3 | 20.2 | 23.9 | 17.8 | 13.1 | 0.2 | -2.9 |
| 22 | -6.9 | -5.8 | 7.0 | 2.9 | 14.0 | 19.5 | 18.9 | 23.5 | 18.5 | 13.8 | 1.8 | -5.5 |
| 23 | -4.4 | -4.3 | 8.6 | -0.8 | 13.2 | 20.2 | 17.1 | 23.3 | 20.3 | 8.6 | 4.4 | -7.3 |
| 24 | -0.7 | -1.2 | 4.9 | 3.0 | 11.7 | 20.8 | 19.3 | 20.1 | 19.9 | 10.9 | 5.1 | -6.5 |
| 25 | -3.0 | 0.5 | *** | 8.6 | 9.8 | 21.3 | 22.5 | 21.9 | 15.5 | 9.9 | 4.1 | -6.0 |
| 26 | -0.4 | -6.2 | *** | 10.9 | 8.7 | 21.9 | 23.3 | 23.1 | 14.2 | 10.3 | 4.5 | -7.7 |
| 27 | -3.5 | -7.1 | *** | 7.5 | 12.5 | 22.0 | 20.3 | 22.3 | 13.9 | 11.6 | 4.8 | -8.4 |
| 28 | -1.0 | -3.4 | *** | 11.2 | 12.7 | 23.0 | 18.6 | 19.1 | 12.8 | 12.0 | 4.2 | -8.4 |
| 29 | 1.2 | ... | *** | 13.6 | 12.0 | 20.1 | 22.6 | 19.2 | 12.6 | 13.8 | 3.6 | -7.4 |
| 30 | -5.4 | ... | *** | 5.4 | 14.6 | 21.5 | 24.0 | 19.9 | 12.7 | 11.4 | -1.2 | -5.7 |
| 31 | -5.9 | ... | -2.2 | ... | 13.9 | ... | 23.3 | 20.1 | ... | 7.9 | ... | -8.2 |
| MEAN | -3.1 | -3.4 | -0.6 | 5.7 | 9.6 | 18.0 | 20.4 | 22.6 | 19.0 | 13.7 | 4.6 | -4.6 |

ITEM DEW-POINT TEMPERATURE (12.3 m HEIGHT)
 INSTRUMENT DEW-POINT HYGROMETER (LiCl DEW CELL) (E-771)
 UNIT (° C)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 1 | -3.1 | -6.5 | -5.4 | -3.0 | 13.1 | 15.4 | 22.5 | 24.0 | 20.2 | 15.6 | 5.7 | -1.7 |
| 2 | -5.3 | -7.3 | -5.1 | 1.1 | 13.1 | 16.3 | 21.0 | 24.6 | 21.4 | 18.8 | 7.8 | 1.0 |
| 3 | -2.8 | -7.2 | -1.3 | 5.5 | 3.6 | 16.0 | 16.8 | 24.4 | 21.9 | 16.2 | 9.4 | -1.7 |
| 4 | -0.4 | -6.6 | 0.3 | 2.7 | 10.5 | 14.1 | 19.2 | 24.8 | 22.6 | 16.9 | 10.0 | 0.9 |
| 5 | -6.6 | -6.6 | 0.3 | 2.4 | 5.5 | 15.0 | 20.3 | 23.7 | 21.6 | 17.2 | 9.8 | -1.0 |
| 6 | -2.9 | -7.2 | -1.3 | 5.9 | 5.8 | 14.3 | 19.3 | 23.2 | 22.9 | 16.4 | 11.8 | 1.3 |
| 7 | 0.1 | -4.2 | -1.3 | 10.3 | 11.8 | 14.4 | 19.9 | 23.8 | 24.1 | 17.3 | 11.0 | -0.3 |
| 8 | -6.3 | 2.4 | 0.4 | 4.2 | 8.7 | 14.4 | 17.6 | 23.2 | 22.3 | 21.1 | 5.4 | 1.1 |
| 9 | -6.3 | 1.7 | 2.4 | 2.5 | 11.4 | 16.9 | 18.4 | 23.2 | 19.1 | 16.6 | 2.7 | -0.9 |
| 10 | -6.3 | 0.2 | 2.1 | 10.3 | 4.2 | 19.2 | 22.4 | 23.4 | 22.1 | 16.2 | 6.5 | -1.5 |
| 11 | -4.5 | -8.2 | 5.8 | 9.0 | 5.6 | 19.3 | 22.7 | 22.8 | 23.1 | 14.9 | 7.7 | -3.4 |
| 12 | -6.3 | -8.0 | 1.7 | 4.4 | 8.0 | 19.6 | 17.8 | 24.0 | 21.7 | 12.6 | 6.5 | -3.8 |
| 13 | -7.2 | -3.9 | -9.9 | 6.5 | 6.9 | 17.7 | 17.0 | 23.5 | 23.1 | 12.7 | 4.6 | -6.1 |
| 14 | -3.2 | -6.4 | -7.4 | 6.2 | 6.0 | 16.7 | 20.2 | 23.6 | 23.1 | 16.1 | 7.3 | -6.3 |
| 15 | 2.8 | -3.4 | -2.7 | 8.2 | 8.3 | 17.0 | 22.6 | 24.4 | 18.3 | *** | 4.5 | -5.2 |
| 16 | 3.3 | 1.2 | 0.3 | 4.9 | 3.3 | 16.4 | 23.7 | 22.7 | 15.2 | *** | 3.4 | -5.0 |
| 17 | -1.1 | 2.2 | 6.2 | 5.8 | 8.7 | 16.9 | 24.3 | 21.0 | 15.7 | *** | 0.5 | -6.0 |
| 18 | -2.6 | -1.9 | -0.3 | 0.9 | 12.8 | 18.5 | 23.6 | 23.7 | 18.5 | 14.5 | 1.4 | -10.0 |
| 19 | 1.4 | 1.8 | -5.8 | 5.2 | 14.9 | 19.5 | 20.3 | 24.1 | 21.4 | 12.4 | -0.2 | -7.4 |
| 20 | -2.0 | 3.8 | -1.7 | 8.5 | 6.4 | 19.6 | 17.1 | 24.1 | 20.2 | 11.1 | -0.1 | -4.8 |
| 21 | -4.8 | -2.1 | -3.0 | 10.3 | 10.0 | 19.5 | 20.5 | 24.3 | 17.9 | 13.4 | 0.7 | -2.3 |
| 22 | -6.9 | -6.0 | 6.8 | 2.8 | 14.2 | 19.8 | 19.3 | 23.9 | 18.7 | 14.4 | 2.5 | -5.0 |
| 23 | -4.4 | -4.2 | 8.9 | -0.8 | 13.3 | 20.5 | 17.6 | 23.7 | 20.6 | 8.6 | 5.2 | -7.0 |
| 24 | -0.3 | -1.3 | 5.3 | 3.2 | 12.0 | 21.0 | 19.9 | 20.4 | 20.3 | 11.5 | 6.0 | -5.8 |
| 25 | -2.6 | 0.7 | *** | 8.8 | 10.1 | 21.5 | 23.0 | 22.3 | 15.8 | 10.0 | 5.1 | -5.2 |
| 26 | 0.0 | -6.5 | *** | 11.4 | 8.9 | 22.1 | 23.8 | 23.2 | 14.2 | 10.6 | 5.3 | -7.2 |
| 27 | -3.6 | -7.3 | *** | 8.0 | 12.8 | 22.3 | 20.3 | 22.5 | 13.9 | 12.3 | 5.8 | -7.8 |
| 28 | -0.7 | -3.1 | *** | 11.6 | 12.8 | 23.0 | 19.0 | 19.1 | 12.7 | 12.9 | 5.4 | -7.9 |
| 29 | 1.7 | ... | *** | 13.9 | 12.2 | 20.5 | 23.2 | 19.3 | 12.7 | 14.5 | 4.3 | -7.0 |
| 30 | -5.6 | ... | *** | 5.4 | 14.9 | 21.9 | 24.6 | 20.1 | 13.1 | 11.6 | -1.1 | -5.1 |
| 31 | -6.1 | ... | -2.2 | ... | 13.8 | ... | 23.9 | 20.3 | ... | 7.9 | ... | -7.9 |
| MEAN | -3.0 | -3.4 | -0.3 | 5.9 | 9.8 | 18.3 | 20.7 | 22.9 | 19.3 | 14.1 | 5.2 | -4.2 |

ITEM DEW-POINT TEMPERATURE (29.5 m HEIGHT)
 INSTRUMENT DEW-POINT HYGROMETER (LiCI DEN CELL) (E-771)
 UNIT (° C)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|------|------|-------|------|------|------|------|------|------|------|------|-------|
| 1 | -3.6 | -7.1 | -6.0 | -3.5 | 12.5 | 14.8 | 21.6 | 23.2 | 19.4 | 14.8 | 5.1 | -2.7 |
| 2 | -6.0 | -7.9 | -5.8 | 0.7 | 12.4 | 15.4 | 20.1 | 23.7 | 20.6 | 17.9 | 7.2 | 0.1 |
| 3 | -3.4 | -7.7 | -1.6 | 5.1 | 3.0 | 15.2 | 16.0 | 23.6 | 21.1 | 15.3 | 8.5 | -2.5 |
| 4 | -1.1 | -7.1 | -0.2 | 2.3 | 9.8 | 13.4 | 18.5 | 23.9 | 21.6 | 15.9 | 9.2 | -0.1 |
| 5 | -7.2 | -7.0 | -0.2 | 2.0 | 4.9 | 14.3 | 19.4 | 22.9 | 20.6 | 16.2 | 9.0 | -1.7 |
| 6 | -3.5 | -7.7 | -1.8 | 5.5 | 5.0 | 13.7 | 18.5 | 22.4 | 22.0 | 15.5 | 10.9 | 0.7 |
| 7 | -0.4 | -4.7 | -1.6 | 9.7 | 11.2 | 13.7 | 19.1 | 23.0 | 23.3 | 16.5 | 10.0 | -0.9 |
| 8 | -6.9 | 1.8 | 0.1 | 3.6 | 8.1 | 13.6 | 16.9 | 22.5 | 21.4 | 20.0 | 4.4 | 0.4 |
| 9 | -6.9 | 1.4 | 2.1 | 1.8 | 10.8 | 16.1 | 17.5 | 22.3 | 18.1 | 15.6 | 1.6 | -1.5 |
| 10 | -6.7 | -0.1 | 1.6 | 9.8 | 3.4 | 18.3 | 21.6 | 22.4 | 21.1 | 15.2 | 5.7 | -2.3 |
| 11 | -5.0 | -9.0 | 5.3 | 8.5 | 4.9 | 18.5 | 21.9 | 21.9 | 22.0 | 14.1 | 6.9 | -4.2 |
| 12 | -6.6 | -8.7 | 1.2 | 3.9 | 7.4 | 18.8 | 17.0 | 23.0 | 20.9 | 11.8 | 5.4 | -4.7 |
| 13 | -7.7 | -4.5 | -10.7 | 6.0 | 6.3 | 16.9 | 16.2 | 22.7 | 22.3 | 11.9 | 3.1 | -6.7 |
| 14 | -3.7 | -6.8 | -8.2 | 5.7 | 5.4 | 15.9 | 19.3 | 22.8 | 22.2 | 15.2 | 6.8 | -6.9 |
| 15 | 2.2 | -3.9 | -3.1 | 7.7 | 7.7 | 16.3 | 21.7 | 23.5 | 17.3 | *** | 3.6 | -5.9 |
| 16 | 3.2 | 0.7 | -0.1 | 4.4 | 2.6 | 15.5 | 22.8 | 21.7 | 14.3 | *** | 2.5 | -5.7 |
| 17 | -1.7 | 1.6 | 5.7 | 5.3 | 8.0 | 16.0 | 23.5 | 20.0 | 14.9 | *** | -0.2 | -6.6 |
| 18 | -3.2 | -2.5 | -0.8 | 0.4 | 12.1 | 17.7 | 22.9 | 22.8 | 17.8 | 13.4 | 0.6 | -10.7 |
| 19 | 0.8 | 1.3 | -6.3 | 4.6 | 14.2 | 18.6 | 19.4 | 23.2 | 20.6 | 11.5 | -1.0 | -8.0 |
| 20 | -2.4 | 3.2 | -2.3 | 7.9 | 5.6 | 18.7 | 16.1 | 23.3 | 19.2 | 10.0 | -0.8 | -5.4 |
| 21 | -5.2 | -2.5 | -3.5 | 9.8 | 9.0 | 18.7 | 19.6 | 23.4 | 17.0 | 12.4 | 0.0 | -2.8 |
| 22 | -7.5 | -6.9 | 6.1 | 2.1 | 13.5 | 19.0 | 18.5 | 23.0 | 17.8 | 13.6 | 1.9 | -5.5 |
| 23 | -4.9 | -5.0 | 8.4 | -1.5 | 12.5 | 19.5 | 16.8 | 22.7 | 19.6 | 7.6 | 4.6 | -7.7 |
| 24 | -0.7 | -1.8 | 4.6 | 2.6 | 11.2 | 20.2 | 19.1 | 19.5 | 19.3 | 10.6 | 5.2 | -6.3 |
| 25 | -3.1 | 0.3 | *** | 8.2 | 9.3 | 20.7 | 22.2 | 21.5 | 14.9 | 9.0 | 4.6 | -5.5 |
| 26 | -0.6 | -6.9 | *** | 10.8 | 8.1 | 21.2 | 23.5 | 22.5 | 13.3 | 9.7 | 4.6 | -7.8 |
| 27 | -4.2 | -7.8 | *** | 7.5 | 12.0 | 21.4 | 19.4 | 21.6 | 13.0 | 11.3 | 5.2 | -8.5 |
| 28 | -1.1 | -3.5 | *** | 11.0 | 12.1 | 22.0 | 18.1 | 18.1 | 11.8 | 12.1 | 4.7 | -8.5 |
| 29 | 1.3 | ... | *** | 13.3 | 11.4 | 19.7 | 22.4 | 18.4 | 11.9 | 13.7 | 3.6 | -7.6 |
| 30 | -6.1 | ... | *** | 4.8 | 14.2 | 20.9 | 23.7 | 19.1 | 12.3 | 10.6 | -2.1 | -5.8 |
| 31 | -6.7 | ... | -2.7 | ... | 13.1 | ... | 23.1 | 19.2 | ... | 6.9 | ... | -8.6 |
| MEAN | -3.5 | -3.9 | -0.8 | 5.3 | 9.1 | 17.5 | 19.9 | 22.1 | 18.4 | 13.2 | 4.4 | -4.8 |

ITEM PRECIPITATION (0.3 m HEIGHT)
 INSTRUMENT RAIN GAUGE (TRIPPING BUCKET TYPE) (B-011-00)
 UNIT (mm)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|-------|------|------|------|------|------|-------|-------|------|-------|------|-----|
| 1 | 6.0 | 0.0 | 0.0 | 0.0 | 5.5 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2 | 0.0 | 0.0 | 0.0 | 0.0 | 18.5 | 5.0 | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3 | 0.0 | 0.0 | 0.5 | 1.5 | 0.0 | 9.0 | 14.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4 | 0.0 | 0.0 | 14.0 | 10.5 | 0.0 | 6.0 | 59.0 | 0.0 | 0.0 | 4.5 | 0.0 | 1.0 |
| 5 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 6.0 | 14.0 | 0.0 | 0.0 |
| 6 | 1.0 | 0.0 | 0.0 | 0.0 | 13.5 | 0.0 | 21.0 | 0.0 | 2.0 | 2.5 | 24.5 | 0.0 |
| 7 | 0.0 | 0.0 | 0.0 | 0.0 | 7.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 6.5 | 0.0 |
| 8 | 0.0 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.5 | 0.0 | 27.0 | 0.0 | 0.0 |
| 9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 26.5 | 0.0 | 0.0 | 6.0 | 0.0 | 0.0 |
| 10 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 8.0 | 9.0 | 2.0 | 0.0 | 14.5 | 0.0 | 0.0 |
| 11 | 0.0 | 0.0 | 12.5 | 8.5 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 1.0 | 0.0 | 0.0 |
| 12 | 0.0 | 0.0 | 0.0 | 5.5 | 0.0 | 0.0 | 0.0 | 20.0 | 0.5 | 0.0 | 7.5 | 0.0 |
| 13 | 0.0 | 0.0 | 0.0 | 3.5 | 0.0 | 0.0 | 0.0 | 18.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 |
| 15 | 23.5 | 0.0 | 0.0 | 0.0 | 0.0 | 8.0 | 0.0 | 10.0 | 0.0 | 20.5 | 0.0 | 0.0 |
| 16 | 65.0 | 10.0 | 0.0 | 0.0 | 0.0 | 2.5 | 0.0 | 2.5 | 0.0 | 17.5 | 0.0 | 0.0 |
| 17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 44.0 | 0.0 | 0.0 |
| 18 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 16.5 | 0.0 | 0.0 |
| 19 | 0.0 | 9.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 |
| 20 | 0.0 | 0.5 | 0.0 | 9.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 21 | 0.0 | 0.0 | 0.0 | 10.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 22 | 0.0 | 0.0 | 14.5 | 0.0 | 0.5 | 13.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 |
| 23 | 0.0 | 0.0 | 23.5 | 0.0 | 11.0 | 1.0 | 0.0 | 31.5 | 0.0 | 4.5 | 0.0 | 0.0 |
| 24 | 0.0 | 2.0 | 0.5 | 0.0 | 5.0 | 0.0 | 0.0 | 5.0 | 17.5 | 0.0 | 0.0 | 0.0 |
| 25 | 0.0 | 15.0 | 5.0 | 0.0 | 2.0 | 0.0 | 5.5 | 32.0 | 4.0 | 0.0 | 0.0 | 0.0 |
| 26 | 7.5 | 0.0 | 0.0 | 22.0 | 0.0 | 0.0 | 59.5 | 31.5 | 0.0 | 3.0 | 0.0 | 0.0 |
| 27 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 |
| 28 | 0.0 | 0.0 | 11.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| 29 | 0.5 | ... | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30 | 0.0 | ... | 0.0 | 0.0 | 3.5 | 7.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| 31 | 0.0 | ... | 0.0 | ... | 10.5 | ... | 0.0 | 0.0 | ... | 0.0 | ... | 0.0 |
| TOTAL | 103.5 | 41.5 | 84.5 | 71.0 | 78.0 | 63.0 | 201.0 | 200.5 | 35.0 | 181.0 | 38.5 | 1.0 |

ITEM EVAPOTRANSPIRATION (0.00 m HEIGHT)
 INSTRUMENT WEIGHING LYSTMETER (RL-15TFA)
 UNIT (mm)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|------|------|-----|-----|-----|------|------|------|------|------|------|------|
| 1 | *** | 1.0 | *** | *** | *** | *** | 0.7 | 3.3 | 3.2 | 1.3 | 1.6 | 0.4 |
| 2 | 1.4 | 1.0 | *** | *** | *** | *** | 2.8 | 2.9 | 2.9 | 1.5 | 1.4 | 0.6 |
| 3 | 1.3 | 0.9 | *** | *** | *** | *** | 1.6 | 3.2 | 2.7 | 1.2 | 1.2 | 0.3 |
| 4 | 1.6 | 0.7 | *** | *** | *** | *** | *** | 3.7 | 1.6 | *** | 1.5 | 0.2 |
| 5 | 1.4 | 1.0 | *** | *** | *** | 3.7 | 2.9 | 4.0 | *** | *** | 1.4 | 1.1 |
| 6 | 1.2 | 0.6 | *** | *** | *** | 4.1 | *** | 3.4 | 0.8 | 0.9 | *** | 0.3 |
| 7 | 1.9 | 0.9 | *** | *** | *** | 2.6 | 2.8 | 3.0 | 1.7 | 1.3 | *** | 0.6 |
| 8 | 1.2 | *** | *** | *** | *** | 2.7 | 3.2 | 2.5 | 2.1 | *** | 4.4 | 0.3 |
| 9 | 1.0 | 0.8 | *** | *** | *** | 2.3 | *** | 3.3 | 0.7 | *** | 3.7 | 0.6 |
| 10 | 0.9 | 1.0 | *** | *** | *** | *** | *** | 2.5 | 1.4 | *** | 2.9 | 0.3 |
| 11 | 1.0 | 0.8 | *** | *** | *** | 2.1 | 2.6 | 4.4 | 0.7 | 1.6 | 1.8 | 0.3 |
| 12 | 1.0 | 0.8 | *** | *** | *** | 4.1 | 3.7 | *** | 1.5 | 1.5 | *** | 0.4 |
| 13 | 0.7 | 0.6 | *** | *** | *** | 3.7 | 3.9 | *** | 1.5 | 4.2 | 1.8 | 0.4 |
| 14 | 0.5 | 0.6 | *** | *** | *** | 2.1 | 1.5 | 3.3 | 1.1 | 2.9 | 1.7 | 0.3 |
| 15 | *** | 0.7 | *** | *** | *** | *** | 4.0 | 3.2 | 0.8 | *** | 1.2 | 0.4 |
| 16 | *** | *** | *** | *** | *** | 1.1 | 2.2 | 5.4 | 1.2 | *** | 1.7 | 0.3 |
| 17 | 0.4 | 0.8 | *** | *** | *** | 2.0 | 2.9 | 5.6 | 1.5 | *** | 1.4 | 0.3 |
| 18 | 0.7 | 0.7 | *** | *** | *** | 2.6 | 4.3 | 3.8 | 1.3 | *** | 1.3 | 0.3 |
| 19 | 0.3 | *** | *** | *** | *** | 2.7 | 3.2 | 4.1 | 1.1 | 2.1 | 1.2 | 0.4 |
| 20 | 3.1 | 0.8 | *** | *** | *** | 3.2 | 4.5 | 4.2 | 0.6 | 1.8 | 1.0 | 0.2 |
| 21 | 2.5 | 1.2 | *** | *** | *** | 4.0 | 5.2 | 4.1 | 1.2 | 4.1 | 1.1 | 0.2 |
| 22 | 1.9 | *** | *** | *** | *** | *** | 2.6 | 2.5 | 0.4 | 1.9 | 0.8 | 0.3 |
| 23 | 1.5 | *** | *** | *** | *** | 1.2 | 2.5 | *** | 0.9 | 3.2 | 0.7 | 0.2 |
| 24 | 1.5 | *** | *** | *** | *** | 3.6 | 1.3 | 2.3 | *** | 2.5 | 0.6 | 0.3 |
| 25 | 1.3 | *** | *** | *** | *** | 4.4 | 1.8 | *** | 1.0 | 2.3 | 0.8 | 0.3 |
| 26 | *** | *** | *** | *** | *** | 2.9 | *** | *** | 1.3 | *** | 0.5 | 0.4 |
| 27 | 1.2 | *** | *** | *** | *** | 2.4 | *** | 1.7 | 0.6 | 1.3 | 0.5 | 0.2 |
| 28 | 1.2 | *** | *** | *** | *** | 3.0 | 7.0 | 1.3 | 0.7 | 2.1 | 0.6 | 0.3 |
| 29 | 1.0 | ... | *** | *** | *** | 1.7 | 4.9 | 5.5 | 1.3 | 1.2 | 0.6 | 0.3 |
| 30 | 1.5 | ... | *** | *** | *** | *** | 3.9 | 3.7 | 1.3 | 1.3 | 0.6 | 0.3 |
| 31 | 1.2 | ... | *** | ... | *** | ... | 3.3 | 2.5 | ... | 1.4 | ... | 0.3 |
| TOTAL | 34.4 | 14.7 | *** | *** | *** | 62.1 | 78.9 | 89.4 | 37.0 | 41.2 | 38.0 | 10.8 |

ITEM ATMOSPHERIC PRESSURE (1.5 m HEIGHT)
 INSTRUMENT BAROMETER (PTB210)
 UNIT (hPa)
 YEAR 2005

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 1004 | 988 | 1016 | 1016 | 1007 | 1005 | 1003 | 1006 | 1013 | 1015 | 1021 | 1015 |
| 2 | 1016 | 999 | 1019 | 1017 | 1001 | 1006 | 1001 | 1007 | 1012 | 1006 | 1022 | 1010 |
| 3 | 1016 | 1007 | 1021 | 1005 | 1010 | 1002 | 1004 | 1007 | 1010 | 1013 | 1018 | 1007 |
| 4 | 1004 | 1008 | 1013 | 1008 | 1007 | 1002 | 998 | 1009 | 1011 | 1012 | 1015 | 1003 |
| 5 | 1017 | 1007 | 1015 | 1013 | 1007 | 1005 | 995 | 1009 | 1012 | 1014 | 1014 | 994 |
| 6 | 1020 | 1015 | 1017 | 1011 | 1008 | 1012 | 999 | 1008 | 1011 | 1016 | 1011 | 1005 |
| 7 | 1007 | 1022 | 1018 | 1006 | 999 | 1016 | 1002 | 1008 | 1003 | 1016 | 1000 | 1014 |
| 8 | 1012 | 1019 | 1014 | 1005 | 1004 | 1015 | 1007 | 1008 | 1006 | 1008 | 1006 | 1015 |
| 9 | 1009 | 1018 | 1014 | 1015 | 997 | 1010 | 1009 | 1008 | 1015 | 1017 | 1010 | 1012 |
| 10 | 1010 | 1008 | 1016 | 1011 | 1003 | 1003 | 1000 | 1005 | 1015 | 1019 | 1015 | 1010 |
| 11 | 1006 | 1017 | 1003 | 1009 | 1013 | 995 | 1001 | 1007 | 1014 | 1019 | 1012 | 1009 |
| 12 | 1005 | 1020 | 995 | 1011 | 1007 | 997 | 1002 | 1007 | 1015 | 1018 | 1010 | 1004 |
| 13 | 1010 | 1018 | 1004 | 1005 | 1008 | 1003 | 1011 | 1006 | 1011 | 1019 | 1017 | 1002 |
| 14 | 1015 | 1022 | 1012 | 1014 | 1015 | 1009 | 1013 | 1003 | 1005 | 1014 | 1012 | 1007 |
| 15 | 1012 | 1021 | 1022 | 1014 | 1010 | 1007 | 1014 | 996 | 1010 | 1008 | 1011 | 1013 |
| 16 | 995 | 1014 | 1020 | 1015 | 1012 | 1007 | 1013 | 1001 | 1019 | 1009 | 1013 | 1010 |
| 17 | 1001 | 1012 | 1009 | 1016 | 1017 | 1006 | 1011 | 1007 | 1020 | 1014 | 1017 | 1005 |
| 18 | 1012 | 1022 | 1000 | 1024 | 1008 | 1004 | 1007 | 1009 | 1017 | 1016 | 1017 | 1006 |
| 19 | 1012 | 1013 | 1017 | 1024 | 1003 | 1002 | 1003 | 1007 | 1012 | 1018 | 1018 | 1009 |
| 20 | 1007 | 1003 | 1014 | 1017 | 1010 | 1001 | 1004 | 1006 | 1009 | 1018 | 1021 | 1016 |
| 21 | 1012 | 1011 | 1014 | 1001 | 1009 | 1005 | 1003 | 1007 | 1011 | 1013 | 1019 | 1004 |
| 22 | 1018 | 1015 | 1011 | 1002 | 1004 | 1002 | 1005 | 1006 | 1014 | 1002 | 1017 | 988 |
| 23 | 1019 | 1006 | 1001 | 1011 | 1000 | 1002 | 1007 | 1006 | 1011 | 1000 | 1018 | 1001 |
| 24 | 1012 | 1009 | 1000 | 1019 | 1004 | 1002 | 1007 | 1011 | 1009 | 1010 | 1011 | 1007 |
| 25 | 1005 | 1005 | 1000 | 1014 | 1011 | 1004 | 1005 | 1010 | 1005 | 1016 | 1011 | 1009 |
| 26 | 1007 | 1009 | 1012 | 1005 | 1014 | 1004 | 991 | 1000 | 1012 | 1022 | 1013 | 1004 |
| 27 | 1010 | 1016 | 1016 | 1008 | 1013 | 1001 | 993 | 1006 | 1017 | 1021 | 1010 | 1011 |
| 28 | 1010 | 1013 | 1007 | 1002 | 1015 | 999 | 1003 | 1007 | 1017 | 1016 | 1012 | 1018 |
| 29 | 1006 | ... | 996 | 1000 | 1018 | 1006 | 1004 | 1008 | 1019 | 1007 | 999 | 1022 |
| 30 | 998 | ... | 1002 | 1008 | 1012 | 1006 | 1005 | 1009 | 1021 | 1010 | 1007 | 1018 |
| 31 | 996 | ... | 1008 | ... | 1001 | ... | 1006 | 1011 | ... | 1013 | ... | 1021 |
| MEAN | 1009 | 1012 | 1010 | 1011 | 1008 | 1005 | 1004 | 1007 | 1013 | 1014 | 1013 | 1009 |