The CI and RDT NWCSAF Convection Products

European Nowcasting Conference, April 2019

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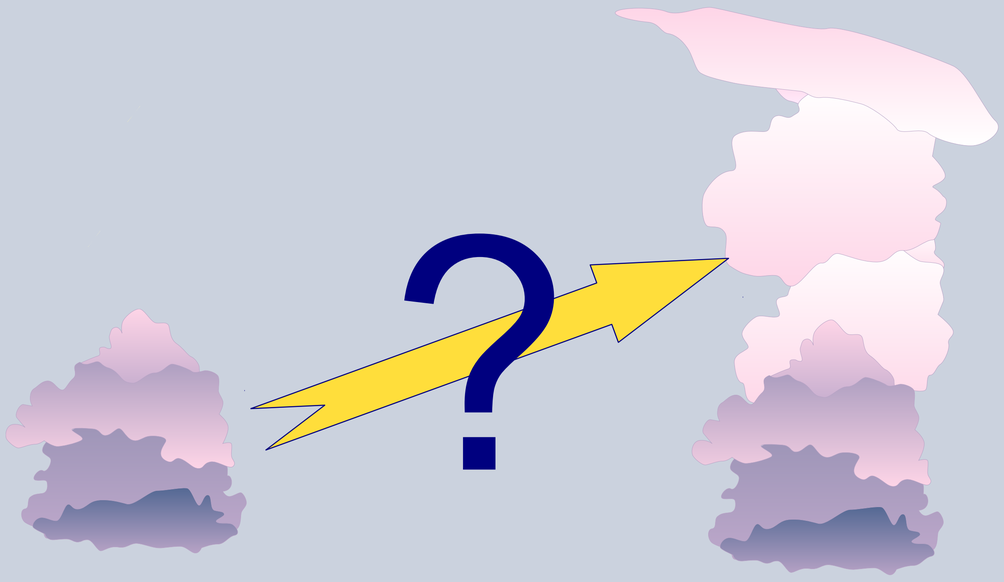
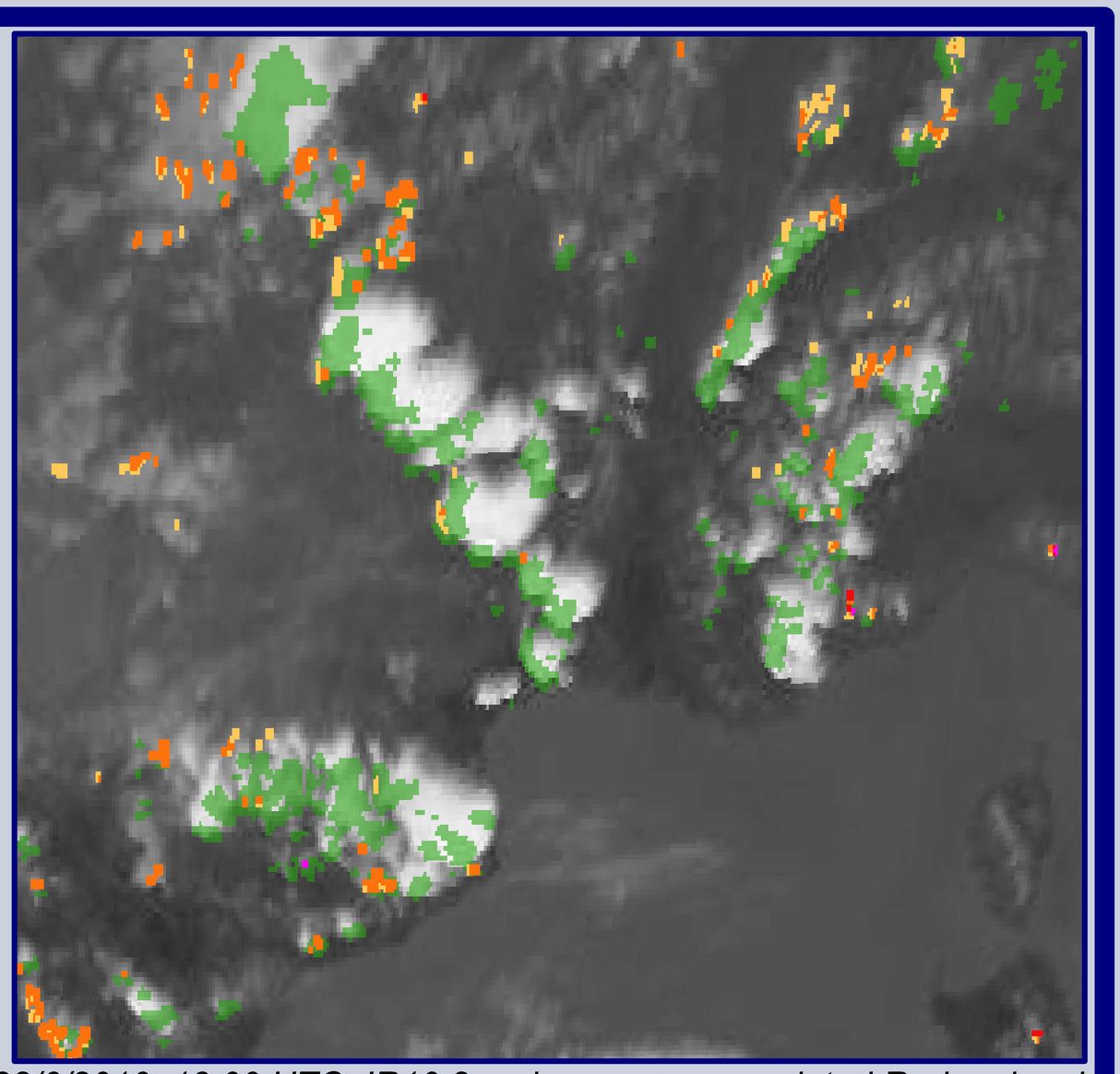
CI Convection Initiation



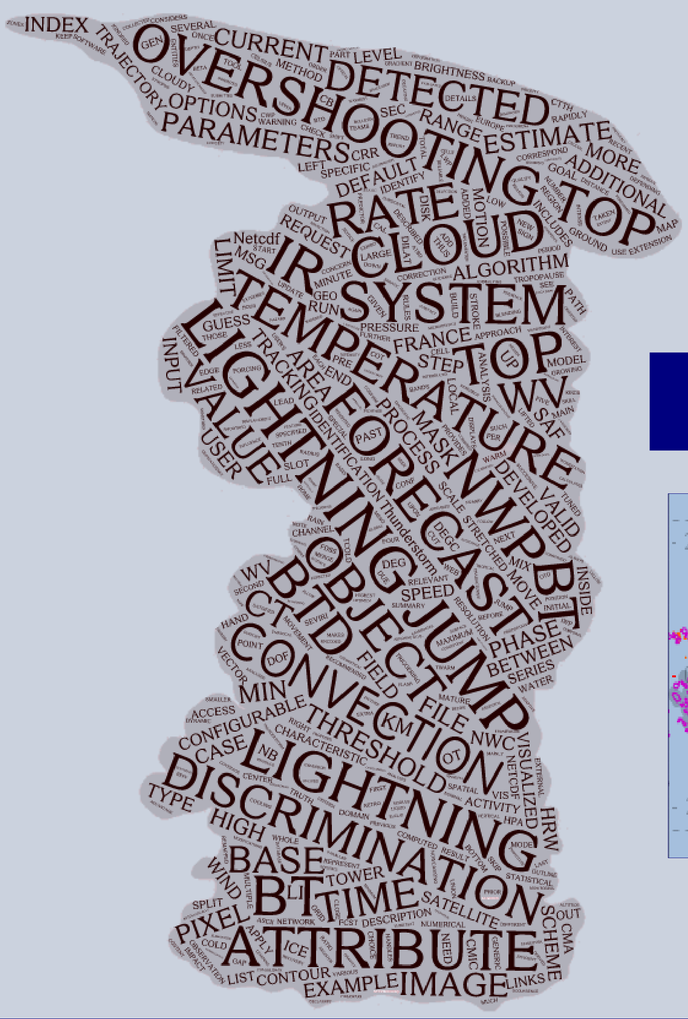
- Probability of a cloudy pixel to become convective for 3 steps 0-30', 0-60' and 0-90'
- 3 categories of criteria: cloud-top, glaciation, cloud-top trends
- v2018: new tuning of relevant BT BTD and trends
- v2018: daily use of microphysics
- v2018: use of a 2D movement field
- Validation: quantitative (TROPOS) and case-studies

v2018 pre-operational



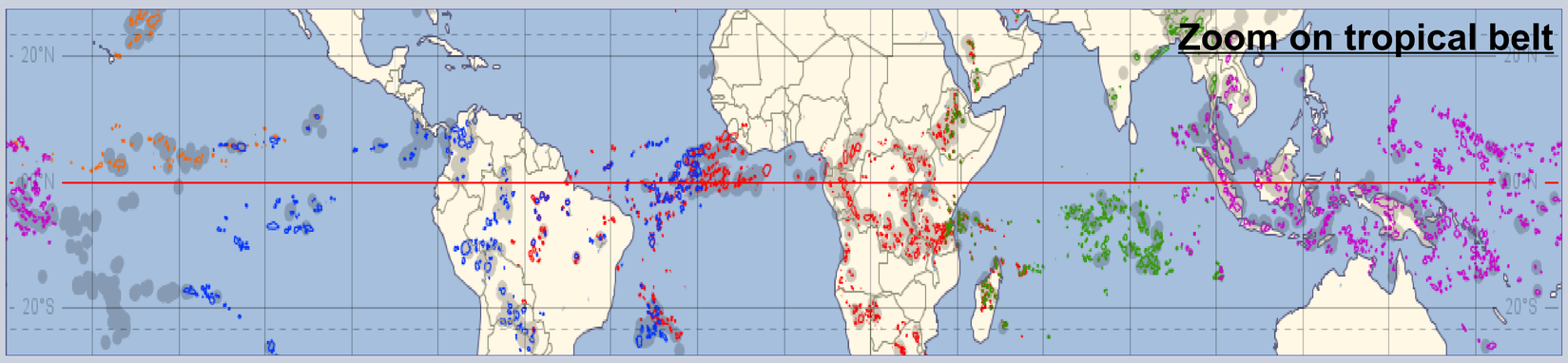
28/6/2010–13:00 UTC. IR10.8µm image + accumulated Radar signal (>35 dBZ) for [13;13h30] in green + CI probability for [13-13h30]. Colour code for CI: yellow for [0-25%] probability of Convection, orange [25-50%], red [50-75%], magenta [75-100%]

RDT Rapidly Developing Thunderstorm



- Object-oriented approach, adding value to the satellite image
- Toward a 3D description of the cloud (overshooting top detection, two levels, high altitude ice crystals, etc.)
- v2018: end-users feedback taken into account (stability of outlines)
- v2018: new discrimination scheme CAL, adapted to the wide variety of satellite-scans
- v2018: lightning jump algorithm

v2018 operational | **Many Attributes** | **Global Production by MF**



2/4/2019-13:15 UTC. RDT cells. All cells projected on same validity date. In magenta RDT operated by Météo-France with Himawari8, orange GOES15, blue GOES16, red MSG4, green MSG1. WWLLN lightning network in grey. Synopsis visualisation tool

Further steps

- v2018 GOES16 patch
- May 2019 Eumetrain Convection Week
- CDOP4 2022-2027 preparation
- Use of HRV in RDT overshooting top detection
- MTG upcoming.

Credits

- Contact: jean-marc.moisselin@meteo.fr
- Main references. CI: SATCAST methodology, Best Practice Document (2013), VSA report (Karagiannidis, 2016), AS activity (TROPOS, 2018). RDT: Best Practice guide, works from Pedeboy or Schultz for Lightning Jump
- Word cloud: wordart.com. Cloud Images: Tracey Saxby, IAN Image Library (ian.umces.edu/imagelibrary)