DAFTAR RIWAYAT HIDUP

1. Nama/NIP : Dr. Ir. Robert J. Kodoatie M. Eng 131596960
2. Tempat/ Tgl. Lahir : Semarang, 10 Oktober 1958
3. Agama Islam : Katholik
4. Pangkat / Golongan : Penata / IIIc
5. Unit Kerja : Fakultas Teknik UNDIP
6. Alamat kantor : Magister Teknik Sipil, Program Pasca Sarjana UNDIP Jl. Imam Barjo, SH. No. 5 Semarang
   Telp. (024) 411450, 318856 Fax. (024) 318856
   e-mail : mtsundip@indosat.net.id.
7. Alamat Rumah : Jl. Saputan Raya No. 14, RT-04/RW-01
   Sikluwung Asri Semarang Telp. (024) 6722707
   e-mail: rjkodoatie@hotmail.com
8. Bidang Keahlian :
   - Pengelolaan Sumber Daya Air Hidrolika dan Sedimentasi
9. Riwayat Pendidikan :
   - Teknik Sipil – Fak. Teknik UNDIP, 1983
   - University of Alberta, Edmonton, Canada, 1991
   - Colorado State University, Fort Collins, USA, 1999
10. Riwayat Pekerjaan :
    - Dosen Fakultas Teknik Jurusan Teknik Sipil UNDIP, sejak tahun 1986
    - Dosen Magister Teknik Sipil UNDIP, mulai tahun 2000
11. Kegiatan Ilmiah Nasional dan Internasional :
    - Pembicara pada Seminar: “Himpunan Ahli Teknik Hidraulik Indonesia (HATHI)” di Universitas Semarang 2 September 2000.
    - Anggota Tim Pemerintah Prop. Jateng dalam “Pertemuan Regional O & P Pengairan Tahun 2000 Wilayah I” di Medan-Sumatera Utara, 23 September 2000.
    - Ketua Panitia Seminar Internasional “Paradigm & Strategy of Infrastructure Management” Co-operation between Colorado State University, USA dan Universitas Diponegoro, di Semarang, 13 Juli 2000.

SEDIMENT TRANSPORT RELATIONS IN ALLUVIAL CHANNELS

ABSTRACT

This dissertation present new methods for predicting sediment transport in alluvial channeils. The new methods were developed based on simple equations and easy-toapply parametric relationships and can be applied to a wide range of river conditions, modifications of Posada (1995), Simons et al. (1981) and Laursen (1958) equations and Laursen graph with a wide range of field and flume data are presented.

The first step is to test the applicability of 10 selected sediment transport relations, including Eins.

Tein (1950), Laursen (1958), Bagnold (1966), Toffaletti (1969), Shen & Hung (1972), Ackers & White (1973), Yang (1973), Brownlie (1981), Karim & Kennedy (1981) and Karim (1998), using field data of alluvial rivers. Review and evaluation some of comparion results between computed and measured sediment discharges by previous researchers were conducted. A summary of the selected values is also presented.

The relation and correlation of hydraulic geometry and sediment characteristics to the sediment transport rates were examined carefully. Velocity, slope and dimensionless unit sizes to the measured sediment transport rate were used to modify one or two existing equations. Using statistical approaches and non-linear optimization, simple sediment transport relations were developed so they can be easily applied and be used for practical purposes.

A total of 4532 data sets from 33 river systems in the United States of America. South America, and Asia were used for analysis and verification. The flied data were divided randomly into two groups; one for analysis and the other for validation and verification. In addition, 919 sets of laboratory data from 19 sources were added to verify the proposed methods.

The data were divided according to the mean diameter particle of sediment of river bed materials ranging from silt to gravel, including silt-bed rivers, very fine to fine sand-bed rivers, medium to very coarse sand-bed rivers, and gravel-bed rivers. The data also were grouped according to river size, including small rivers, intermediate rivers and big rivers.