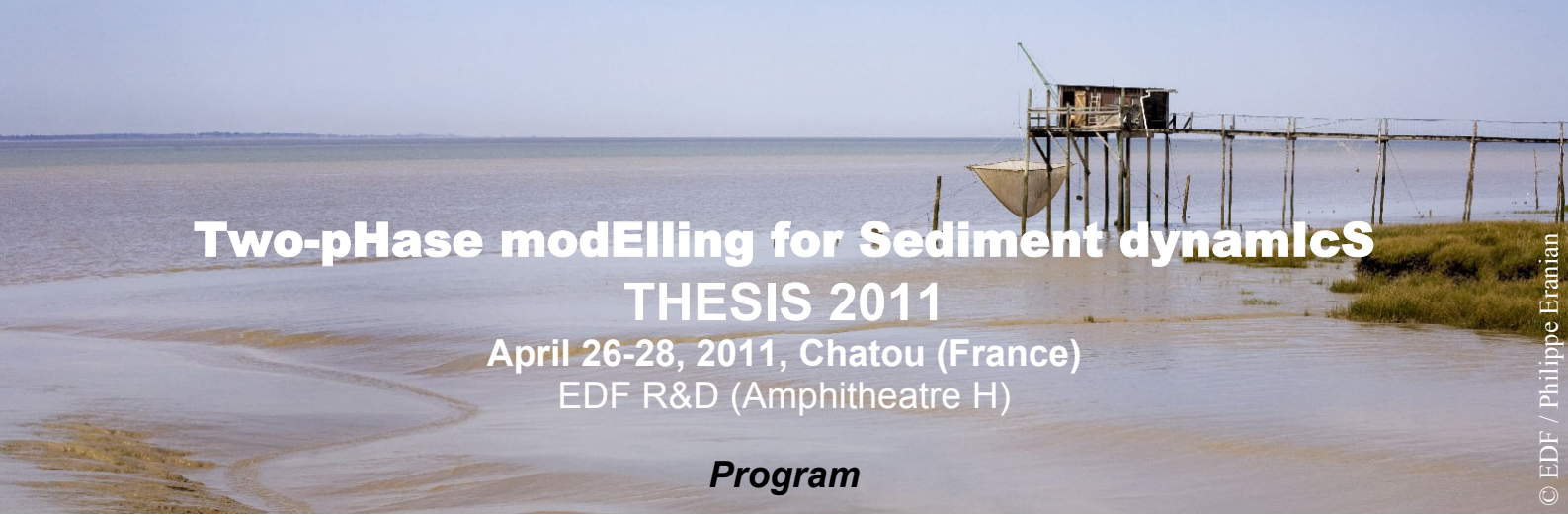

Two-pHase modElling for Sediment dynamIcS
THESIS 2011

April 26-28, 2011, Chatou (France)

EDF R&D (Amphitheatre H)

Program

Tuesday April 26th, 2011

08:30-09:30	Registration – Welcome coffee
09:30-10:00	Opening Ceremony
10:00-10h50:	**Keynote Lecture** Wind-blown sand by *James T. Jenkins, Cornell University, USA.*

Session A-1 : Fundamentals (physical processes, mathematical formulations and parameterisation)

Chairman : O. Simonin

10:50-11:10	A two-phase model for sheet flow and its application to wave-induced sediment transport *by T-J Hsu, J.T. Jenkins and P.L.F. Liu*
11:10-11:30	Low-Reynolds modelling of high-concentrated near-bottom suspended sediment transport *by E. A. Toorman*
11:30-12:00	**Coffee-Break**

Session B-1 : Two-phase Flow modelling (numerical techniques, turbulence modelling)

Chairman: A. Soldati

12:00-12:20	Simulations coupling DEM with RANS fluid solver for sheet flow transport with mixed-size sediments *by J. Calantoni, S. P. Bateman, and T-J Hsu*
12:20-12:40	Multiphase modelling of sand discharging into tank *by A. Shakibaeinia and Y-C Jin*
12:40-13:00	Comparison between one- and two-phase numerical models for dam-break waves induced sediment transport *by K. El Kadi Abderrezzak, A. Die-Moran, B. Spinewine and A. Paquier*
13:00-14:15	**LUNCH**
14:15-15:05	**Keynote Lecture** Sediment transport under dam-break flows on steep slope by *C. Ancey, EPFL, Lausanne Switzerland*

Session D-1 : Environmental applications (sheet flows, highly concentrated flows…)
Chairman: J. Jenkins

15:05-15:25	Numerical experiments of breaking waves on dissipative and intermediate beaches using a two-phase flow method *by R. Bakhtyar and D.A. Barry*
15:25-15:45	Two-phase modelling for turbidity maximum transport in the Gironde Estuary (France) *by F. Levy, R.R. Ray, K.D. Nguyen and D. Pham Van Bang*
15:45-16:05	Numerical prediction of flow domain downstream of bottom outlet gates due to sediment transportation *by S.M.K. Emami and M.R .Kavianpour*
16:05-16:35	**Coffee-Break**

Session A-2 : Fundamentals (physical processes, mathematical formulations and parameterisation)
Chairman: P. Blondeaux

16:35-16:55	Deposition and resuspension of particles in turbulent boundary layers *by C. Marchioli and A. Soldati*
16:55-17:15	Dispersion velocity of solid particles in sediment-laden flows *by D.Y. Zhong, G.Q. Wang and N.N. Fan*
17:15-17:35	Modeling particle saltation *by M. Mazzuoli and G. Seminara*
18:00-19:30	**Reception Cocktail offered by the Local Organising Committee**

Wednesday April 27th, 2011

9:30-10:20	**Keynote Lecture** *by Olivier Simonin - IMFT, France*

Session A-3 : Fundamentals (physical processes, mathematical formulations and parameterisation)
Chairman: M. Brocchini

10:20-10:40	PDF models for turbulent two-phase flows: a review *by S. Chibbaro*
10:40-11:00	Experimental and numerical investigation of kinematics structure of turbid underflow on small slope *by S.A. Hosseini, E. Hajbabaei and A. Shamsai*
11:00-11:20	A stochastic formulation for particle kinetics in wall-bounded granular flow *by F. Liu, H-B Ma, X-D Fu and G.Q Wang*
11:20-11:50	**Coffee-Break**

Session C-1 : Experimental techniques in laboratories and in the field
Chairman: T.J. Hsu

11:50-12:10	Experiment investigation of the seabed scouring around a submarine pipeline laying on different types of seabed *by M. Mattioli, A. Mancinelli and M. Brocchini*
12:10-12:30	Experimental investigation on turbulent structures and sediment transport *by D. Termini and V. Sammartano*
12:30-12:50	Erosion and sediment sorting produced by antidunes and alternate bars in an experimental bed *by F. Núñez-González and J.-P. Martín-Vide*
12:50-13:10	Velocity and concentration profiles within dam-break-induced intense bedload layers *by B. Spinewine, R. Aleixo and H. Capra*
13:10-14:20	**LUNCH**
14:20-15:10	**Keynote Lecture** An overview of coastal bedforms and grain sorting phenomena *by Paolo Blondeaux - University of Genoa, Italy*

Session D-2 : Environmental applications (sheet flows, highly concentrated flows…)
Chairman: C. Ancey

15:10-15:30	Application of a simple power law for transport ratio with bimodal distributions of spherical grains under oscillatory forcing *by K. Holway, C. Thaxton, and J. Calantoni*
15:30-15:50	Simulation for the convective descent phase of dredged-sediment releases in the seawater by a two-fluid model *by D. H. Nguyen, S. Guillou, K. D. Nguyen, D. Pham Van Bang, and J. Chauchat*
15:50-16:10	POD study of the multiphase flow simulation of a very high concentrated release of sediment in water *by D. H. Nguyen, L. Yu, A. Santa-Cruz and S. Guillou*
16:10-16:40	**Coffee-Break**

Session A-4 : Fundamentals (physical processes, mathematical formulations and parameterisation)
Chairman: Z.Y. Wang

16:40-17:00	Bedload transport. Part 1: two-phase model and 3D numerical implementation *by J. Chauchat, M. Pailha, P. Aussillous, E. Guazzelli and M. Médale*
17:00-17:20	Bedload transport. Part 2: the mobile granular layer *by M. Pailha, J. Chauchat, P. Aussillous, M. Médale and E. Guazzelli*

Thursday April 28th, 2011

Session B-2 : Two-phase Flow modelling (numerical techniques, turbulence modelling)
Chairman: N. Izumi

09:30-09:50	A Lagrangian model for simulation of sedimentation of rigid particle suspensions *by R. Verjus, S. Guillou and M. Ahamadi*
09:50-10:10	Two-dimensional two-layer shallow-water model for river flows with significant sediment transport *by C. Swartenbroekx, S. Soares-Frazão and Y. Zech*
10:10-10:30	Simulation of particles transport by fluid flow over a porous medium *by J. Zhang, B. Benmezroua, P. Dupont and M. Hellou*
10:30-10:50	Two-phase flow simulation of bed-load transport with Lagrange model *by A. Yeganeh-Bakhtiary and E. Kazemi*
10:50-11:20	**Coffee-Break**

Session A-5 : Fundamentals (physical processes, mathematical formulations and parameterisation)
Chairman: M. Sekine

11:20-11:40	Assessing sediment stress closures in two-phase models *by L. O. Amoudry and I. Crocicchia*
11:40-12:00	Integrated two-phase drift-flux models for modeling sediment transport *by F. Kerger, B.J. Dewals, P. Archambeau, S. Erpicum and M. Pirotton*
12:00-12:20	Investigating parameterizations for sedimentation rates using mixture theory simulations *by A. M. Penko, J. Simeonov and J. Calantoni*
12:20-13:30	**LUNCH**
13:30-14:45 Session chairmen:	**Visit of Hydraulic Facilities (EDF R&D and Saint-Venant Lab.)** *M. Benoit – D. Pham Van Bang*
14:45-16:30 Session chairman:	**Round-Table & Closing Ceremony** *P. Dong*

EDF — LABORATORY FOR HYDRAULICS SAINT-VENANT — SHF SOCIETE HYDROTECHNIQUE DE FRANCE — IAHR AIRH