



## PROGRAMME DAY 1 – 15 April

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<b>08:30 – 10:00</b>	<b>Registration &amp; Poster set-up</b>
<b>10:00 – 10:10</b>	<b>Welcome by the organizers</b> <b>Vera Van Lancker</b> Royal Belgian Institute of Natural Sciences, Belgium Guest professor at Ghent University, Belgium
<b>10:10 – 10:40</b>	<b>OPENING KEYNOTE: Gaps in understanding of sedimentary bedforms in the ancient, the present, the extraterrestrial and the kitchen</b> <b>Maarten Kleinhans</b> Professor at Utrecht University, The Netherlands
<b>10:40 – 10:50</b>	<b>1-minute poster presentations</b> <ol style="list-style-type: none"><li>1 <i>Conceptual model of object burial in turbid waters on a sandy seabed</i> M. Baeye et al.</li><li>2 <i>A GIS-based hydrographic resurvey strategy of the Belgian Continental Shelf</i> N. Bos et al.</li><li>3 <i>Developments in the North Sea wide resurveying and charting of dynamic sand wave areas</i> L. Dorst, T. Dehling &amp; C. Howlett</li><li>4 <i>Sand waves morphology and small-scale migration at a macrotidal tropical estuary (São Marcos bay, Brazil)</i> F. Chagas et al.</li><li>5 <i>Complex morphology and organisation of dunes in a giant dunes field</i> T. Garlan et al.</li><li>6 <i>Deciphering mega-ripple variability in an anthropogenically-steered environment: implications for mine burial studies</i> S. Papili, M. Baeye &amp; V. Van Lancker</li><li>7 <i>Influence of dunes on alternate bar migration in a sandy gravel river: the Loire (France)</i> S. Rodrigues et al.</li><li>8 <i>Impact evaluation of marine aggregate extraction through adaptive monitoring of bottom shear stress in bedform areas</i> V. Van Lancker et al.</li></ol>
<b>10:50 – 11:10</b>	<b>Coffee break</b>
<b>11:10 – 12:30</b>	<b>SESSION 1: BEDFORM EVOLUTION AND PROPERTIES</b> <b>Chair: Thomas Wever</b>
11:10 – 11:30	<i>Short and long term evolution of deep giant submarine dunes in continental shelf environment: the example of the "Banc du Four" (Western Brittany, France)</i> P. Franzetti et al.
11:30 – 11:50	<i>Amplified sediment waves in the Irish Sea (AmSedIS)</i> K. Van Landeghem et al.
11:50 – 11:57	<i>Bedform characterization in river channel through 2D spectral analysis</i> A. Lisimenka & S. Rudowski
11:58 – 12:05	<i>Burial Recording Mines: a valid technique to study bedform migration and storm impact above the sea-floor</i> S. Papili, T. Wever & Y. Dupont
12:06 – 12:13	<i>Morphobathymetric and sediment dynamics analysis on the Gulf of Valencia</i>

*Continental Slope (NW Mediterranean)*  
M. Ribó et al.

**12:15 – 12:30**

**Questions**

**12:30 – 14:00**

**Lunch and poster session**

**14:00 – 14:30**

**KEYNOTE: Modelling Offshore Sandwaves: Approaches, Biological Interaction and Applications**

**Suzanne J.M.H. Hulscher**

Professor at Twente University, The Netherlands

**14:30 – 15:45**

**SESSION 2: HYDRODYNAMIC AND MORPHODYNAMIC MODELLING**

**Chair: Daniel Parsons**

Professor at Hull University, United Kingdom

14:30 – 14:50

*The dynamics of bedform amalgamation: new insights from a very thin flume*  
J. Best et al.

14:50 – 15:10

*The response and hysteresis of alluvial dunes under transient flow conditions*  
A. Reesink et al.

15:10 – 15:17

*Modelling sediment pick-up and deposition in a dune model*  
O. van Duin et al.

15:18 – 15:25

*Large-eddy simulation of flow over barchan dunes*  
M. Omidyeganeh et al. (Presentation by U. Piomelli)

15:26 – 15:33

*Sand transport over a barchan dune*  
F. Charru & V. Laval

**15:33 – 15:43**

**Questions**

**15:45 – 16:00**

**1-minute poster presentations**

- 1 *An experimental investigation of 3D subaqueous interacting barchan dunes and their morphodynamic processes*  
G. Blois et al. (Presentation by J. Best)
- 2 *Numerical Modelling of flumes with moving dunes – TELEMAC3D and Sisyphé*  
A. Goll, R. Kopmann & C. Villaret
- 3 *Numerical simulation of dune morphodynamic changes for unsteady flows*  
P. Grover & A. Ferreira da Silva
- 4 *Estimation of the friction coefficient induced by marine dune using high resolution bathymetric data*  
N. Huybrechts et al.
- 5 *Flow structures and bedform dynamics around tidally-induced bars*  
C. Keevil et al.
- 6 *Selection of bedform morphology in an experimental flume under supply-limited conditions*  
N. Le Dantec et al.
- 7 *Effects of disposed sediments on local sediment transport and meso-scale morphology*  
W. Vandenbruwaene, G. Vos & Y. Plancke
- 8 *Biogeomorphology in the field: bedforms and species, a mystic relationship*  
V. Van Lancker et al.
- 9 *An equivalent bottom for navigation above irregular bottoms*  
M. Vantorre, M. Candries & E. Lataire

**16:00 – 16:30**

**Coffee break**

**16:30 – 17:45**

**SESSION 3: BIOGEOMORPHOLOGY**

**Chair: Katrien Van Landeghem**

Lecturer at Bangor University, United Kingdom

- 16:30 – 16:50 *Biogeomorphological self-organization in sandy shelf seas*  
B.W. Borsje et al.
- 16:50 – 17:10 *Physical and biological cohesion within mixed sand-mud beds: implications for erosion and bedform development*  
J.H. Baas & J. Malarkey
- 17:10 – 17:17 *A first phase in the habitat classification for the Zeeschelde: Bed form classification*  
G.R. Vos et al.
- 17:18 – 17:25 *Disposal strategy to create ecological valuable habitats in the Western Scheldt estuary*  
S. Ides & Y. Plancke
- 17:26 – 17:33 *Morphology of pillow-hollow and quilted-cover bedforms in Lake Geneva, Switzerland*  
N. Le Dantec et al.
- 17:35 – 17:45 Questions**
- 18:30 Reception at the City Hall of Bruges**  
Welcome address by Marc Mosar, City of Brugge

## PROGRAMME DAY 2 – 16 April

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- 08:30 – 09:00 KEYNOTE: Acoustic developments for the measurement of sediment processes over bedforms**  
**Peter D. Thorne**  
Professor at National Oceanography Centre, United Kingdom
- 09:00 – 10:25 SESSION 4: HYDRODYNAMIC AND MORPHODYNAMIC MODELLING**  
**Chair: Jim Best**  
Professor at University of Illinois at Urbana-Champaign, United States
- 09:00 – 09:20 *Modeling Dune dynamics in situations with bimodal sediment distributions*  
M.A.F. Knaapen, J. Willis & J.H. Harris
- 09:20 – 09:40 *Sediment transport distribution along equilibrium sand dunes*  
S. Naqshband et al.
- 09:40 – 10:00 *Influence of time- and depth-dependent eddy viscosity on the formation of tidal sandwaves*  
P.C. Roos & H.M. Schuttelaars
- 10:00 – 10:07 *Numerical simulation of turbulent sediment transport*  
O. Durán, B. Andreotti & P. Claudin (Presentation by P. Claudin)
- 10:08 – 10:15 *Sand ripple volume generator for underwater acoustic models, a cellular automaton Monte-Carlo approach*  
P. Staelens, Y. Dupont & J.-P. Henriet
- 10:15 – 10:25 Questions**
- 10:25 – 10:55 Coffee break**
- 10:55 – 12:10 SESSION 5: BEDFORM EVOLUTION AND PROPERTIES**  
**Chair: Sophie Le Bot**  
Maître de Conférences at Rouen University, France
- 10:55 – 11 :15 *Object Burial by Bedforms: Results from instrumented modules, new data analysis concepts*  
T. Wever & C. Jenkins

- 11:15 – 11:35 *Analysis of coherent flow structures over alluvial dunes revealed by multi-beam echo-sounder acoustic backscatter*  
S.M. Simmons et al.
- 11:35 – 11:42 *Evolution of secondary cellular circulation flow above submarine bedforms imaged by remote sensing techniques*  
I. Hennings & D. Herbers
- 11:43 – 11:50 *Sorting patterns over tidal sand waves: comparing field observations with theoretical predictions*  
T. Van Oyen, P. Blondeaux & D. Van den Eynde
- 11:51 – 11:58 *Deep-water bottom current dynamics: processes, products & challenges*  
D. Van Rooij
- 12:00 – 12:10 Questions**
- 12:10 – 13:30 Lunch and poster session**
- 13:30 - 14:00 KEYNOTE: Large-eddy simulations in dune-dynamics research**  
**Ugo Piomelli**  
Professor at Queen's University, Canada
- 14:00 – 15:05 SESSION 6: HYDRODYNAMIC AND MORPHODYNAMIC MODELLING**  
**Chair: Tomas Van Oyen**  
Postdoc researcher at Ghent University, Belgium
- 14:00 – 14:20 *On the influence of bed permeability on flow in the leeside of coarse-grained bedforms*  
G. Blois et al. (Presentation by J. Best)
- 14:20 – 14:27 *Flow structures over fixed 2D bedforms in transient states*  
C.A. Unsworth et al.
- 14:28 – 14:35 *Three-dimensional spatial variations of suspended sediment concentration over vortex ripples*  
A.M. Penko & J. Calantoni
- 14:36 – 14:43 *Variation of flow separation over large bedforms during a tidal cycle*  
A. Lefebvre et al.
- 14:44 – 14:51 *Hydrodynamic modeling over a sand wave field at São Marcos Bay, Brazil*  
L. Samaritano et al. (Presentation by F.M. Chagas)
- 14:55 – 15:05 Questions**
- 15:05 – 15:35 Coffee break**
- 15:35 – 17:10 SESSION 7: PRACTICAL APPLICATIONS AND HUMAN INFLUENCES**  
**Chair: Yves Plancke**  
Senior Research Engineer at Flanders Hydraulics Research, Belgium
- 15:35 – 15:55 *Bed form dynamics in relation to headwater discharge and human influences in the tidal Elbe river, Germany*  
N. Gehres et al.
- 15:55 – 16:15 *How the Belgian wind farm business made us discover the challenging environment of marine sand dunes*  
A. Bolle, M. Mathys & P. Haerens
- 16:15 – 16:35 *Gravel dunes generated during ice-jam floods, Tom River, Western Siberia*  
A. Vershinin et al. (Presentation by R. Kostaschuk)
- 16:35 – 16:42 *On the role of fine-sand dune dynamics in controlling water depth changes in Rio Parapeti, Serrania Borebigua (Southern sub-Andean zone of Bolivia)*

N. de Ville, D. Petrovic & M.A Verbanck

- 16:43 – 16:50 *Evolution of bed form height and length during a discharge wave*  
J.J. Warmink, R.M.J. Schielen & C.M. Dohmen-Janssen
- 16:51 – 16:58 *Essential facts of the monitoring of the sand extraction and its impact on the Flemish banks on the Belgian continental shelf from 2003 to 2012*  
M. Roche et al.
- 17:00 – 17:10 Questions**
- 17:10 – 17:30 Future of MARID**  
**Thierry Garlan**  
Senior scientist (Dr) at the French Naval Hydrographic and Oceanographic Service
- 17:30 – 17:45 AWARDS**
- 19:00 Conference dinner at Brewery Halve Maan, Bruges**

## PROGRAMME DAY 3 – 17 April

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### FIELD TRIP

**Organizers: Yves Plancke & Tomas Van Oyen**

Senior Research Engineer at Flanders Hydraulics Research, Belgium

Postdoc researcher at Ghent University, Belgium

**Schedule**

8h00 Departure from Bruges towards Breskens, Western Scheldt  
09h00 – 13h Boat trip  
13h45 – 17h Guided Tour Zwin Nature Reserve  
17h30 Arrival Bruges