



**ICEBREAKER – Sunday 3<sup>rd</sup> of April 2016**

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**19:00 – 23:00 Icebreaker and registration**

*At Galeri Caernarfon, Victoria Dock, LL55 1SQ, Caernarfon, North Wales*

**SCIENCE PROGRAMME DAY 1 – Monday 4<sup>th</sup> of April 2016**

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**08:30 – 09:50 Registration and poster setup**

*At Galeri Caernarfon, Victoria Dock, LL55 1SQ, Caernarfon, North Wales*

**09:50 – 10:00 Welcome by the organisers**

**Katrien Van Landeghem and Jaco Baas**

*School of Ocean sciences, Bangor University, United Kingdom*

**10:00 – 10:35 Keynote**

**Marco Colombini:** “Stability of river bed forms”

*Università di Genova, DICCA, Genova, Italy*

**10:35 – 10:50 2-minute poster presentations**

- 1. Paul Carling:** “Ground Penetrating Radar stratigraphy and dynamics of megaflood gravel dunes”  
*University of Southampton, United Kingdom*
- 2. Johan Damveld:** “Smart and sustainable design for offshore operations in a sandy seabed”  
*University of Twente, the Netherlands*
- 3. Knut Krämer:** “Field measurements of small scale bedform dynamics in tidal environments in the German Bight”  
*MARUM - University of Bremen, Germany*
- 4. Julien Ogor:** “Towards the automation of sand dune detection in the bathymetry”  
*Ensta-Bretagne, France*
- 5. Arnoud Sootman:** “Depositional character of submarine dunes on a Pleistocene distally steepened carbonate ramp (Favignana Island, Italy)”  
*University of Geneva, Switzerland*
- 6. Xuxu Wu:** “Wave-induced ripples development in mixed clay-sand substrates”  
*University of Hull, United Kingdom*
- 7. Aurélie Maspataud:** “High resolution coastal DEM of the Dover Strait: managing with dynamic sedimentary structures”  
*Service Hydrographique et Océanographique de la Marine (SHOM), France*

**10:50 – 11:15 Coffee and poster session**

11:15 – 12:15

### Session 1: Sedimentary bedforms in a variety of flow conditions

Chair: Vera Van Lancker, *Royal Belgian Institute of Natural Sciences, Belgium*

Co-Chair: Connor McCarron, *Bangor University, United Kingdom*

- 11:15 – 11:30 1. **Eric Prokocki**: “Bedform morphology across the fluvio-tidal-marine hydraulic transitions: Lower Columbia River, USA”  
*University of Illinois, United States of America*
- 11:30 – 11:45 2. **F. Javier Hernández-Molina**: “Larger morphological sea-floor features and bedforms associated to the Mediterranean Outflow Water in the Gulf of Cadiz”  
*Royal Holloway University of London, United Kingdom*
- 11:45 – 12:00 3. **Geert Campmans**: “Modelling the influence of storm-related processes on sand wave dynamics: a linear stability approach”  
*University of Twente, the Netherlands*
- 12:00 – 12:15 4. **Xiaochuan Ma**: “Geometry and internal structures of dunes in the bedload convergence regions in Beibu Gulf, northwest South China Sea”  
*Institute of Oceanology, Chinese Academy of Sciences, China*

12:15 – 12:30

### 2-minute poster presentations

1. **Jaco Baas (Jim Best)**: “Predicting bedforms and primary current stratification in cohesive mixtures of mud and sand”  
*University of Illinois, United States of America*
2. **Olivier Blanpain** (Thierry Garlan): “Measurement and modelling of bedload self-generated noise on a sandy dune”  
*Service Hydrographique et Océanographique de la Marine (SHOM), France*
3. **Oliver Schloemer**: “Physical modeling of fluvial obstacle marks at a sediment layer of limited thickness”  
*University of Bonn, Germany*
4. **Akirat Abdulkade**: “Temporally dynamic, spatially static, cobble bedforms in reversing subtidal currents”  
*University of Southampton, United Kingdom*
5. **Hao Hu**: “The response of bedforms and bed elevation to sudden hydrodynamics changes”  
*University of Hull, United Kingdom*
6. **Thierry Schmitt**: “Multibeam survey of a tidal banner bank: morphology of dunes in eroding partially compacted sands?”  
*Service Hydrographique et Océanographique de la Marine (SHOM), France*
7. **Imen Turki (Sophie Le Bot)**: “Changes in migration of intertidal dunes: from observation to modelling. Case of Somme Bay (NW France)”  
*University of Rouen, France*
8. **Zygmunt Babiński (Michał Habel)**: “The value of the bedload movement on alluvial rivers using analysis of sand bars migration”  
*Kazimierz Wielki University in Bydgoszcz, Poland*

12:30 – 13:45

### Lunch and poster session

13:45 – 15:30

### Session 2: The interaction between sedimentary bedforms and the flow above it

Chair: Suzanne Hulscher, *University of Twente, the Netherlands*

Co-Chair: Julia Cisneros, *University of Illinois, United States of America*

- 13:45 – 14:00 1. **Alice Lefebvre**: “Influence of complex bedform morphology on flow and shear stress”  
*MARUM - University of Bremen, Germany*
- 14:00 – 14:15 2. **Ingo Hennings**: “Suspended sediment dynamics above submerged compound sand waves observed during a tidal cycle”  
*GEOMAR Helmholtz - Zentrum für Ozeanforschung Kiel, Germany*
- 14:15 – 14:30 3. **Donya Frank**: “High-speed phase-separated PIV over laboratory sand ripples”  
*US Naval Research Laboratory, United States of America*

- 14:30 – 14:45 **4. Peter Thorne:** “Measurements and analysis of suspended sediment particle size sorting above bedforms under waves”  
*National Oceanography Centre, United Kingdom*
- 14:45 – 15:00 **5. Nathaniel Bristow:** “Measurements of flow dynamics associated with interacting, subaqueous barchans: Exploring bedform asymmetry and three-dimensionality in a novel flume environment”  
*University of Notre Dame, France*
- 15:00 – 15:15 **6. Anne Baar:** “Influence of bedforms on the transverse bed slope effect”  
*Utrecht University, the Netherlands*
- 15:15 – 15:30 **7. Edith Gallagher:** “A Self-Organization Model for Multi-Scale Bedforms in Tidal Inlets and Bedform-Induced Roughness”  
*Franklin and Marshall College, United States of America*

**15:30 – 16:00 Coffee and poster session**

**16:00 – 16:35 Keynote (with laser scan of delegates)**

**John Reynolds:** “Managing the issue of seabed sediment in offshore renewable energy projects”  
*Reynolds International Ltd, United Kingdom*

**16:35 – 17:50 Session 3: Wider applications of dune dynamics research**

Chair: Sophie Le Bot, *University of Rouen, France*

Co-Chair: Geert Campmans, *University of Twente, the Netherlands*

- 16:35 – 16:50 **1. Nathalie Debese:** “Ripple filtering and ridge enhancement applied to morphodynamical tracking of sand dunes”  
*ENSTA Bretagne, France*
- 16:50 – 17:05 **2. Vera Van Lancker:** “Large dunes hosting hotspots of biodiversity: Testing proxies of occurrence and habitat change”  
*Royal Belgian Institute of Natural Sciences, Belgium*
- 17:05 – 17:20 **3. Wei Huang:** “Application of artificial dunes to shoal protection in waterway regulation practice”  
*Changjiang Waterway planning Design and Research Institute, China*
- 17:20 – 17:35 **4. Reenu Toodesh:** “First steps towards developing a risk-based hydrographic surveying policy”  
*Delft University of Technology, the Netherlands*
- 17:35 – 17:50 **5. Nathan Terseleer:** “Dynamics of very-large dunes in sandbank areas subdued to marine aggregate extraction, Belgian continental shelf”  
*Royal Belgian Institute of Natural Sciences, Belgium*

**17:50 – 19:00 Break**

**19:00 – Reception and Conference dinner**

*At The Celtic Royal Hotel, Bangor street, LL55 1AY, Caernarfon, North Wales*

## SCIENCE PROGRAMME DAY 2 – Tuesday 5<sup>th</sup> of April 2016

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<b>08:35 – 08:40</b>	<b>Welcome by the organisers</b> <b>Katrien Van Landeghem and Jaco Baas</b> <i>School of Ocean sciences, Bangor University, United Kingdom</i>
<b>08:40 – 09:15</b>	<b>Keynote</b> <b>Christian Winter: “Properties of active tidal bedforms”</b> <i>MARUM - University of Bremen, Germany</i>
<b>09:15 – 10:15</b>	<b>Session 4: Influence of sediment composition on bedform dynamics</b> Chair: Dan Parsons, <i>University of Hull, United Kingdom</i> Co-Chair: Queralt Guerrero, <i>Institut de Ciències del Mar (CSIC), Spain</i>
09:15 – 09:30	<b>1. Connor McCarron: “Sediment transport and bedform morphodynamics in sand-gravel mixtures”</b> <i>Bangor University, United Kingdom</i>
09:30 – 09:45	<b>2. Ian Dougal Lichtman: “Bedform migration in an intertidal environment influenced by cohesion”</b> <i>National Oceanography Centre, United Kingdom</i>
09:45 – 10:00	<b>3. Leiping Ye: “Bedform development and morphodynamics in mixed cohesive sediment substrates: the importance of winnowing and flocculation”</b> <i>University of Hull, United Kingdom</i>
10:00 – 10:15	<b>4. Katrien Van Landeghem: “Methane-rich glacial clays on top of a large sediment wave?”</b> <i>Bangor University, United Kingdom</i>
<b>10:15 – 10:45</b>	<b>Coffee and poster session</b>
<b>10:45 – 12:00</b>	<b>Session 5: Dune morphometrics and morphodynamics</b> Chair: Alain Trentesaux, <i>University of Lille, France</i> Co-Chair: Eric Prokocki, <i>University of Illinois (UIUC), United States of America</i>
10:45 – 11:00	<b>1. Thierry Garlan: “From regional variability of the morphology of dunes to a new method of their classification”</b> <i>Service Hydrographique et Océanographique de la Marine (SHOM), France</i>
11:00 – 11:15	<b>2. Julia Cisneros: “Low-angle dunes in big rivers: morphology, occurrence and speculations on their origin”</b> <i>University of Illinois, United States of America</i>
11:15 – 11:30	<b>3. Claire Keevil: “Dune migration around a bar within a tidal system”</b> <i>University of Hull, United Kingdom</i>
11:30 – 11:45	<b>4. John Damen: “Spatial variations in sand waves superimposed on sand banks: an automated analysis method”</b> <i>University of Twente, the Netherlands</i>
11:45 – 12:00	<b>5. Arnold Jan Reesink: “Visualizing bed deformation and sediment dispersal across dune fields”</b> <i>University of Southampton, United Kingdom</i>
<b>12:00 – 13:30</b>	<b>Lunch and poster session</b>

<b>13:30 – 14:45</b>	<b>Session 6: Evolution of sedimentary bedforms over different time scales</b> Chair: Thierry Garlan, <i>Service Hydrographique et Océanographique de la Marine (SHOM), France</i> Co-Chair: Nathaniel Bristow, <i>University of Notre Dame, France</i>
13:30 – 13:45	1. <b>Kyungsik Choi:</b> “Morphodynamics, hydrodynamics and stratigraphic architecture of intertidal compound dunes on the open-coast macrotidal flat in the south of Ganghwa Island in Gyeonggi Bay, Korea” <i>Seoul National University, South Korea</i>
13:45 – 14:00	2. <b>Queralto Guerrero:</b> “Contemporary subaqueous dune-field development off an abandoned river mouth in the Ebro Delta (NW Mediterranean)” <i>Instituto de Ciències del Mar (ICM-CSIC), Spain</i>
14:00 – 14:15	3. <b>Christopher Herbert:</b> “Unit bars formed by dune stacking in a recirculating flume” <i>University of East Anglia, United Kingdom</i>
14:15 – 14:30	4. <b>Ruth Durán:</b> “Holocene evolution of sand ridges in a tideless continental shelf (Western Mediterranean)” <i>Instituto de Ciències del Mar (ICM-CSIC), Spain</i>
14:30 – 14:45	5. <b>Jord Warmink:</b> “Adapting the Coleman et al. (2005) time-lag approach for application under unsteady discharge” <i>University of Twente, the Netherlands</i>
<b>14:45 – 15:25</b>	<b>Coffee and last poster session</b>
<b>15:25 – 16:00</b>	<b>Field trip presentation</b> <b>Emmer Litt,</b> <i>Natural Resources Wales, United Kingdom</i> <b>Martin Austin and Guy Springett,</b> <i>Bangor University, United Kingdom</i>
<b>16:00 – 16:20</b>	<b>Questions and Answers - MARIDV</b> Chairs: Jim Best, <i>University of Illinois (UIUC), United States of America</i> Jaco Baas, <i>Bangor University, United Kingdom</i>
<b>16:20 – 16:30</b>	<b>Awards</b> – presented by Katrien Van Landeghem, <i>Bangor University, United Kingdom</i>
<b>16:30 – 17:00</b>	<b>Future of MARID</b> <b>Thierry Garlan,</b> <i>Service Hydrographique et Océanographique de la Marine (SHOM), France</i>
<b>17:00 – 17:55</b>	<b>Break</b>
<b>18:00 – 19:00</b>	<b>Guided Tour Caernarfon Castle</b> <i>Leaving from Galeri Caernarfon at 17:50 or meet at the castle entrance at 17:55</i>

## FIELD TRIP – Wednesday 6<sup>th</sup> of April 2016

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<b>8:00</b>	Departure with minibuses from assembly point outside Galeri Caernarfon
<b>9:00 – 12:15</b>	Scientific tour of Newborough dune regeneration project (1.5 hours) + Technical demonstration of remote sensing techniques for geomorphological analyses (1.5 hours) <b>Emmer Litt</b> , <i>Natural Resources Wales, United Kingdom</i> <b>Guy Springett</b> , <i>Bangor University, United Kingdom</i> <b>Tim D’Urban Jackson</b> , <i>Bangor University, United Kingdom</i>
<b>12:30 – 13:45</b>	Lunch at the Prichard Jones Institute <i>4 Cottage Homes, Niwbwrch (Newborough), Llanfairpwllgwyngyll LL61 6SY</i>
<b>14:00 – 16:00</b>	Anglesey Sea Salt Tour and taster session (1 hour) + Scientific tour of Menai Strait sand bars (1 hour) <i>Halen Môn, Ty Halen, Brynsiencyn LL61 6TQ</i> <b>Martin Austin</b> , <i>Bangor University, United Kingdom</i>