

**MATTHIEU J.B. CARTIGNY**

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**Post-doctoral Research Associate  
Sedimentology group  
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**PROFESSIONAL HISTORY**

<b>Utrecht University</b>	Utrecht
PDRA, Sedimentology <i>The dynamics of high concentration turbidity currents in straight channels, channel bends and channel-lobe transitions</i>	2011-present
PDRA, Sedimentology <i>Coupling between dynamics of suspended sediment transport, deposition and sediment bed evolution in Deep-water Channels and Lobes</i>	2010-2011
PhD, Sedimentology/Physical Geography <i>Morphodynamics of supercritical high-density turbidity currents</i>	2007-2011
<b>Delft University of Technology</b>	Delft
MSc, Mechanical engineering (Off-shore Engineering & Fluid Mechanics, <i>cum laude</i> ) <i>Influence of density stratification on transporting sand-water mixtures through 90°bends in pipelines</i>	2003-2007
<b>Leiden University</b>	Leiden
MA, Philosophy ( <i>Not completed</i> )	2005-2008
<b>Several shipping companies</b>	
Third-Chief officer	2001-2003
<b>Martime Institute “De Ruyter”</b>	Vlissingen
BSc, Shipping officer	1997-2001

**GRANTS & AWARDS**

From turbidity current to lithofacies, facies and system tracts and system architecture- Experimental investigation. <i>Co-Applicant, Industry funded</i>	2013-2017
Wave-induced bedform dynamics in mixed cohesive–noncohesive sediments: a fundamental re-calibration of sediment transport models in coastal environments. <i>Co-Investigator, 7<sup>th</sup> EC framework HYDRALAB IV</i>	2013
The dynamics of high concentration turbidity currents in straight channels, channel bends and channel-lobe transitions. <i>Co-Applicant/PDRA, Industry funded</i>	2011-2013
Coupling between dynamics of suspended sediment transport, deposition and sediment bed evolution in Deep-water Channels and Lobes. <i>Co-Applicant/PDRA, Industry funded</i>	2010-2011
VBKO best hydraulic engineering MSc-thesis award	2007

## RELATED PROFESSIONAL EXPERIENCE

Session chair, 29th EGU Meeting, Vienna <i>Siliciclastic, volcanoclastic and calciclastic turbidity currents: Experiments, deposits and modeling</i>	2013
Session co-chair, 29th IAS Meeting, Schladming <i>Physical, numerical, and analytical modelling of sediment erosion, transport and deposition</i>	2012
Invited presentation, TNO: Netherlands Organisation for Applied Scientific Research <i>Morphodynamics and sedimentary structures of bedforms under supercritical-flow conditions</i>	2012
Invited presentation, Fugro Engineers <i>Linking turbidity currents to bedforms, in submarine canyons</i>	2010
Summer school, IAS <i>Sedimentary archives of regional vs. Global change: case study of the Neogene basins of Southern Spain</i>	2009
Invited presentation, Museon, Natural history museum, The Hague <i>Troebeingsstromen door onderzeese canyons</i>	2009
Summer school, Netherlands Institute for Sea Research (NIOZ) <i>Oceanography</i>	2009
Session co-chair, 33th IAHR Congress, Vancouver <i>Sediment transport at hydraulic jumps</i>	2009
Summer school, IAHR <i>Complex flows, turbulence, morphodynamics and ecology of rivers</i>	2008

## TEACHING EXPERIENCE

### Supervisor/Co-Supervisor

~5 MSc students, ~10 BSc students, ~5 industry internships 2007-present

### Teaching assistant

Introduction Sedimentary Geology (1<sup>st</sup> year students) 2010-present

Sedimentology and Stratigraphy (2<sup>nd</sup> year students) 2007-present

Field work, Paleo Reconstruction of Tresp basin, Spain (2<sup>nd</sup> year students ) 2007-present

Sedimentology, (2<sup>nd</sup> year students, Vrije Universiteit Amsterdam) 2011-present

Dynamics of sedimentary systems (4<sup>th</sup> year students) 2007-present

## SKILLS

**Software:** MS Office, Adobe Creative Suit (Illustrator, Indesign,Photoshop), MatLab, SciLab, Fortran, LINUX, Latex, LabView

**Languages:** Dutch (native), English (fluent), German (moderate), French (moderate), Spanish (basics), Turkish (basics)

## PROFESSIONAL ASSOCIATIONS

International Association of Sedimentologists  
Geological Society of America (SEPM)  
European Geosciences Union  
Royal Geological and Mining Society of the Netherlands  
Community Surface Dynamics Modeling System  
Community of Sediment Experimentalist  
International Sediment Club

## PEER-REVIEWED PUBLICATIONS

**Cartigny, M.J.B.**, Ventra, D., Postma G. and Van Den Berg, J.H. (submitted) Morphodynamics and sedimentary structures of bedforms under supercritical-flow conditions: new insights from flume experiments. *Sedimentology*.

**Cartigny, M.J.B.**, Eggenhuisen, J.T., Hansen, E.W.M., Postma, G. (submitted) Concentration-dependent flow stratification in experimental high-density turbidity currents and their relevance to turbidite facies models. *Journal of sedimentary Research*.

Janocko, M., **Cartigny, M.J.B.**, Nemeč, W., Hansen E.W.M. (submitted) Turbidity current hydraulics and sediment deposition in erodible sinuous channels: laboratory experiments and numerical simulations. *Marine and Petroleum Geology*

**Cartigny, M.J.B.**, Postma, G., Kleverlaan, K., Ventra, D. and Van Den Berg, J.H. (submitted) Experimental studies of supercritical bedforms applied to coarse-grained turbidite deposits of the Tabernas intermontane Basin (SE Spain, late Miocene), *Journal of Sedimentary Research*.

Basani, R., Janocko, M., **Cartigny M.J.B.**, Hansen, E.W.M., Dirks, R., Postma, G., Eggenhuisen J.T. (submitted) MassFLOW-3DTM as a simulation tool for turbidity currents: some preliminary results. In: *From depositional systems to sedimentary successions on the Norwegian Continental Shelf* (Eds A. Martinius, J. Howell, T. Olsen, R. Ravnås, R. Steel and J. Wonham), *Int. Assoc. Sedimentol. Spec. Publ.*

**Cartigny, M.J.B.**, Postma, G. Van Den Berg, J.H. and Mastbergen, D.R. (2011) A comparative study of sediment waves and cyclic steps based on geometries, internal structures and numerical modeling. *Marine Geology*, **280**, 40-56.

Postma, G., **Cartigny, M.J.B.** and Kleverlaan, K. (2009) Structureless, coarse-tail graded Bouma Ta formed by internal hydraulic jump of the turbidity current? *Sedimentary Geology*, **219**, 1-6.

## EXTENDED PROCEEDING ENGINEERING CONFERENCES

**Cartigny, M.J.B.**, Van Den Berg, J.H., Mulder, J., Postma, G., (2009) Stability and morphodynamics of bedforms of the upper flow-regime. *Proceedings 33rd IAHR Congress, Vancouver*.

**Cartigny, M.J.B.**, Talmon, A.M., Delfos R., Vlasblom, W.J. and Rosenbrand, W.F. (2007) On the relation between hydraulic losses due to bends and mixture stratification. *Proceedings CEDA Congress, Rotterdam*.

For a full list of abstracts please visit: [www.geo.uu.nl/~cartigny](http://www.geo.uu.nl/~cartigny)