



ISSMGE TECHNICAL COMMITTEE ADMINISTRATIVE REPORT

Report covering the Presidential period: October 2009 – September 2013

Prepared by: Philippe Jeanjean

Date: June 15, 2013

Name of the Technical Committee: TC209 | Offshore Geotechnics

Chair: Philippe Jeanjean
Vice-Chair: Prof. Mark Randolph
Secretary: Bas van Dijk

Terms of reference

1. Disseminate knowledge and practice between the offshore and onshore geotechnical communities.
2. Disseminate knowledge and practice between the offshore oil and gas and the offshore renewable energy geotechnical communities
3. Establish guidelines on the design of piles and other foundations for cyclic loading.
4. Establish an Honor Lecture to recognize outstanding contributions to the field of Offshore Geotechnics

Composition of TC

Knut Andersen (appointed by TOC)
Andy Barwise (UK)
Sylvie Bretelle (France)
Paul Brunning (Singapore)
T. Brzozowski (Poland)
German Burbano (Spain)
Prof. Yun Wook Choo (appointed by TOC)
Ander Chow (Hong Kong)
Ed Clukey (appointed by Chair)
Kenneth Gavin (Ireland)
Prof. Robert Gilbert (appointed by TOC)
Prof. V.B. Glagovski (Russia)
Prof. Dr.-Ing. Jürgen Grabe (Germany)
Ole Hededal (Denmark)
Prof. Richard Jardine (appointed by Chair)
Richard Jewell (Belgium)
Dirk Luger (Netherlands)
Kaushik Mukherjee (Singapore)
Emilio Nicolini (Italy)
Jose Parra (Venezuela)
Alain Puech (France)

Andrea Richwien (Germany)
Prof. Cassie Rutherford (USA)
Giovanni Spagnoli (Italy)
Jack Templeton (appointed by Chair)
Marc Van den Broeck (Belgium)
Phil Watson (appointed by TOC)
Gülin Yetginer (UK)
Alan Young (appointed by Chair)
Jianhong Zhang (China)
A.A. Zhusupbekov (Kazakhstan)

Corresponding Member:
Prof. William van Impe (Belgium)



Activities prioritized by TC

- Organize specialty conferences, symposiums, and workshop to disseminate knowledge within the offshore community, between the onshore and offshore communities, and between the oil and gas and renewable energy communities.
- Establish guidelines on the design of piles and other foundations for cyclic loading and present results at the 18th ICSMGE conference.
- Establish the ISSMGE McClelland Honor Lecture and deliver it at least once by 2013.

Report on activities

TC209 held five face-to-face meetings in Perth, 2010, Paris, 2011 and Houston, 2011, 2012 and 2013 with remote audio and video links.

In addition to participating in the recurring specialty conferences that underpin the worldwide offshore geotechnics community, the members of TC209 delivered two ISSMGE Honor Lectures, seven keynote lectures, hosted one conference, organized five specialty sessions at key conferences, and published seventy-five papers.

The details of these accomplishments are presented below and complete references for selected papers published by TC209 members are included in the Appendix.

1. Specialty conferences, workshops, publications, and workshop to disseminate knowledge within the offshore community

a. Offshore Technology Conference, Houston, 2010, 2011, 2013:

Three specialty sessions, with sixteen papers, on the latest advancements in offshore geotechnics were organized by Philippe Jeanjean in 2010, 2011, and 2013. Papers by TC209 members Andersen, Brunning, Gilbert, Jeanjean, Watson, Yetginer, and Young focused on understanding the reliability of piles design methods, sharing field performance of pile foundations, and the development of new site investigations tools.

b. 2nd ISFOG conference, Perth, 2010:

The second International Symposium on Frontiers in Offshore Geotechnics was hosted by the University of Western Australia.

Prof. Robert Gilbert presented a keynote lecture entitled “Risk and reliability on the frontier of offshore geotechnics”. TC209 members Clukey, Puech, and Randolph co-authored three other keynote lectures and Ed Clukey presented the keynote lecture entitled “New frontiers for centrifuge modeling in offshore geotechnics”.

Twenty-six papers by TC209 members Barwise, Clukey, van Dijk, Grabe, Jardine, Jeanjean, Luger, Puech, Randolph, Watson, Yetginer, and Young, were also presented. They focused on In-situ site characterization and pore pressure measurements, shallow and piles foundations, jack-up units, pipelines, and risers, and risk.

The proceedings can be purchased [here](#).

c. Society for Underwater Technology, Offshore Site Investigation and Geotechnics Conference, London, 2012:

The conference was held under the auspices of TC209. Prof. Richard Jardine was the key TC209 member of the organizing committee and ensured the conference would host the first ISSMGE McClelland Lecture.

Prof. Richard Jardine, Alain Puech, and Knut Andersen presented a keynote lecture entitled. "Cyclic Loading of Offshore Piles: Potential Effects and Practical Design"

TC209 was strongly represented with eighteen papers by TC 209 members Andersen, Brunning, Grabe, Clukey, Gavin, Jardine, Jeanjean, Jewell, Puech, Randolph, and Yetginer. They focused on development in site investigation technology, soil properties and cyclic behavior, and the design of piles, pipelines and gravity structures,

The proceedings can be purchased [here](#).

d. Marine Operations Specialty Symposium (MOSS), Singapore, 2012

TC209 member Kaushik Mukherjee, presented a paper sharing the regional experience in offshore driven piles.

2. Specialty conferences, workshops, publications, and workshop to disseminate knowledge between the offshore and onshore communities

TC209 made a conscious effort to increase the presence of the offshore community at events typically attended by the onshore industry, including the following activities:

a. GeoRisk conference, Atlanta, 2011:

Prof. Robert Gilbert moderated a keynote session where Prof. Wilson Tang and Limin Zhang presented a lecture on "Development of a Risk-based Landslide Warning System". More details can be found [here](#).

b. ASCE GeoCongress, Oakland, 2012:

Prof. Mark Randolph presented a State-of-the-Art keynote lecture entitled "Offshore Geotechnics - The Challenge of Deepwater Soft Sediments".

Philippe Jeanjean also presented a State-of-the-Practice keynote lecture entitled "Offshore Geotechnics - State of Practice Throughout the Life of an Offshore Field."

In addition, Prof. Robert Gilbert organized a very well attended panel session entitled "Onshore versus Offshore Foundation Engineering - What Each Can Learn from the Other". Panelists included George Goble, Clyde Baker, Robert Stevens, Philippe Jeanjean, and Mark Randolph.

The proceedings can be purchased [here](#).

c. Offshore Technology Conference, Houston, 2012.

Philippe Jeanjean organized a specialty session entitled "Geotechnical Technology Transfer from Onshore and Nearshore Practice". Six papers were presented and are referenced in the Appendix.

d. Special edition of Géotechnique journal, 2012.

Through the leadership of Prof. Jardine, the *Géotechnique* journal published a special theme issue dedicated to Offshore geotechnics (*Géotechnique*, Volume 62, Issue 9, September 2012). Papers by TC209 members Clukey, Jardine, Puech, and Randolph, were included. Further details can be found by clicking [here](#).

e. XX Conference of the Venezuelan Geotechnical Society

TC209 member Jose Parra presented the "Juan F Luppini" Keynote Lecture which included a summary of the geotechnical conditions on the Venezuelan continental shelf that pose a challenge to the assessment of the geohazards and the design of the foundations of the proposed offshore infrastructure.

f. Geo-install, Rotterdam, 2013

Alain Puech presented a keynote lecture on "Effects of installation mode and loading history on the static and cyclic response of SOLCYP test piles" at the International Conference on Installation Effects in Geotechnical Engineering.

g. 18th ICSMGE, Paris, 2013:

The involvement of TC209 in the conference was led and coordinated by Alain Puech. The committee will present a discussion session and a workshop. Other planning participants included van Dijk, Jeanjean, and Randolph.

Richard Jewell prepared the General Report and summarized 35 papers published under the TC209 Offshore Geotechnics umbrella. Individual papers by TC209 members will be presented by Andersen, Choo, Bretelle, Jardine, and Puech.

Prof. Richard Jardine will also deliver the Second Bishop Lecture entitled "Advanced Laboratory Testing in Research and Practice".

h. Special edition of Australian Geomechanics journal, 2013

Phil Watson led the efforts and supported the *Australian Geomechanics* journal in publishing a special edition on offshore and nearshore geotechnics. A number of abstracts were received for publication, and papers are currently undergoing review. The edition is scheduled for publication in December 2013.

i. List of key references in Offshore Geotechnics.

TC209 members Andersen, Mukherjee, and Randolph developed a list of key references in offshore geotechnics which will be soon posted on the ISSMGE website as an introduction to our discipline for other ISSMGE members.

3.Specialty conferences, symposiums, publications, and workshop to disseminate knowledge between the Oil and Gas and the Renewable Energy Communities

a. Offshore Technology Conference, Houston, 2013

Prof Gilbert organized a specialty session entitled "Geotechnical Engineering for Renewable Energy" and five papers from worldwide invited lecturers were presented including papers by TC209 members Spagnoli and Gilbert.

b. Conference on Maritime Energy (COME), Hamburg, 2013:

Prof. Dr.-Ing. Jürgen Grabe led the organizing committee, hosted, and edited the proceedings the Conference on Maritime Energy (COME) on the campus of Hamburg University of Technology on May 21 & 22, 2013. Papers by TC209 members Luger and Puech were presented. More details can be found [here](#).

c. Guidelines for geophysics and geotechnics for renewable energy, 2013:

TC209 member Andy Barwise, working with a sub-committee of the Offshore Site Investigation and Geotechnics (OSIG) Committee of the Society for Underwater Technology (SUT) (www.sut.org) prepared a guidance document entitled "Guidance notes for the planning and execution of geophysical and geotechnical ground investigations for offshore renewable energy developments". The document is aimed for publication in September 2013.

d. Guidelines for planning and designing offshore windturbine foundations

TC209 member Alain Puech is leading a sub-committee of the French Committee of Soil Mechanics (CFMS) devoted to the preparation of "Recommendations for planning and designing offshore windturbines foundations". Work started in early 2013.

4.Establish guidelines on the design of piles and other foundations for cyclic loading

A workshop will be organized at the 18th ICSMGE in Paris to share state-of-the-art recommendations on cyclic loading. Key organizing members include Andersen, van Dijk, Jeanjean, Puech, and Randolph,

Andersen, Puech, and Jardine will present a state-of-the-art report entitled "Cyclic resistant geotechnical design and parameter selection for offshore engineering and other applications". This state-of-the-art report was prepared based on an initiative from TC209. Puech, and six other

authors, will also detail the advances due to the SOLCYP JIP project.

The printed proceedings of this workshop will be funded and published by IREX and will also include the translation into English of six papers originally presented in the main conference in French. Free copies will be distributed at the workshop.

5. Establish the ISSMGE McClelland Honor Lecture and deliver it at least once by 2013.

The ISSMGE McClelland Lecture was officially established on September 17, 2010 and honors the legacy of Mr. Bramlette McClelland (1920-2010), offshore pioneer and visionary. A brief introduction to the life of Mr. McClelland, prepared by Alan Young, is attached.

The First McClelland Lecture was delivered by Dr. James D. (Don) Murff on Sept. 7 2012 at the Royal

Geographical Society in London, during the Society for Underwater Technology 7th International Conference on Offshore Site Investigation and Geotechnics. It is entitled "Estimating the capacity of offshore foundations".

The video, the PowerPoint presentation of the Lecture and the introductions by Randolph, Young, and Jeanjean are available on the ISSMGE website [here](#).

The text of the lecture was published in the proceedings of the above conference and can be purchased for \$10 [here](#).

The Second McClelland Lecture will be delivered by Prof. Mark Randolph on Sept. 3rd 2013 at the International Conference Center during the 18th ICSMGE conference in Paris, France. It is entitled "Analytical contributions to offshore geotechnical engineering."

Observations and recommendations

Upon being re-established after a hiatus, the ISSMGE committee on offshore geotechnics has functioned well. Leadership contributions in key offshore conferences that sustain the offshore geotechnics discipline such as the Offshore

Technology Conference, the SUT OSIG conference, and the ISFOG conference will continue.

The third ISSMGE McClelland Lecture is tentatively planned to be delivered in 2015.

Appendix - Papers authored and co-authored by TC209 members

Papers presented at the Offshore Technology and the SUT OSIG conferences, can be purchased individually from the OnePetro website at www.onepetro.com.

a. ISSMGE Honor Lectures

Randolph, M.F. (2013): "Analytical contributions to offshore geotechnical engineering.", The Second ISSMGE McClelland Honor Lecture, Proceedings, 18th International Conference on Soil Mechanics and Geotechnical Engineering (ICSMGE), Paris.

Jardine, R. J. (2013): "Advanced laboratory testing in research and practice: the Second Bishop Lecture". The Second ISSMGE Bishop Honor

Lecture, Proceedings, 18th International Conference on Soil Mechanics and Geotechnical Engineering (ICSMGE), Paris.

b. Offshore Technology Conference, Houston, 2010, 2011, 2013:

Gilbert, R., Chen, J-Y, Materek, B., Puskar, F., Verret, S., Carpenter J., Young, A., and Murff, J.D. (2010): "Analysis of Potential Conservatism in Foundation Design for Offshore Platform Assessment", Paper 20861.

Jeanjean, P., Watson, P.G., Kolk, H.J., and Lacasse, S. (2010): "RP2GEO: The new API Recommended

Practice for Geotechnical Engineering” Paper 20631.

Young, A.G., Bernard, B.B, Remmes, B.D., Babb, L., and Brooks, J.M. (2011): "CPT Stinger" - An Innovative Method to Obtain CPT Data for Integrated Geoscience Studies», Paper 21569.

Brunning, P., and Ishak, B. (2013): “Improved Pile Driving Predictions in Carbonate Soils and Rock”, Paper 23232

Young, A.G., Murff, J.D., Doyle, E., Gilbert, R., Dutt, R., Aubeny, C., (2013): «An Expert Panel Review of Geotechnical Site Investigation Regulations and Current Industry State of Practice», Paper 24085.

Lacasse, S., Nadim, F., Andersen, K., Knudsen, S., Eidsvig, U., Yetginer, G., Guttormsen, T. and Eide, A. (2013): «Reliability of API, NGI, ICP and Fugro Axial Pile Capacity Calculation Methods», Paper 24063.

Lacasse, S., Nadim, F., Langford, T., Knudsen, S. Yetginer, G., Guttormsen, T. and Eide, A. (2013): «Model Uncertainty in Axial Pile Capacity Design Methods», Paper 24066.

Stuyts, B., Gilbert, R., Cathie, D. (2013) : «A reliability-based interpretation framework for pile-supported offshore wind turbines», Paper 24011.

Spanioli, G., and Weixler, L.: «Alternative offshore foundation installation methods», Paper 23962.

c. 2nd ISFOG conference, Perth, 2010:

Keynote Papers:

Colliat, JL, Dendani, H., Puech, A., Nauroy, JF: “Gulf of Guinea deepwater sediments: Geotechnical properties, design issues and installation experiences.”

Erbrich, C., O’Neill, M., Clancy, P., and Randolph, M.: “Axial and lateral pile design in carbonate soils.”

Gaudin, C., Clukey, E., Garnier, J., Phillips, R.: “New frontiers for centrifuge modeling in offshore geotechnics”.

Gilbert, R., Murff, J.D., and Clukey, E.: “Risk and reliability on the frontier of offshore geotechnics.”

Borel, D., Puech, A., and Po, S.: “A site investigation strategy to obtain fast track shear strength design parameters in deep water soils.”

Boylan, N., Randolph, M., and Low, H.: “Enhancement of the ball penetrometer test with pore pressure measurements.”

McCallum, A., Barwise, A., and Santos, R.: “CPT in polar snow - preliminary observations.”

Osborne, J., Yetginer, G., Halliday, T., and Tjelta, T.: “The future of deepwater investigation: seabed drilling technology?”

Puech, A., Orozco-Calderon, and Foray, P.: “Mini T-bar testing at shallow penetration”

Tjelta, T., and Yetginer, G.: “Luva deepwater site investigation programme and findings.”

Yan, D.J., White, D., and Randolph, M.: “Investigation into novel shallow penetrometers for fine-grained soils.”

Yetginer, G., and Tjelta, T.: “Seabed drilling vs surface drilling - a comparison”

Acosta-Martinez, H.E., Gourvenec, S., and Randolph, M.: « Observations of shallow skirted foundations under transient and sustained uplift. »

Mana, D., Gourvenec, S., and Randolph, M.: “A numerical study of the vertical bearing capacity of skirted foundations.”

Aldridge, T., Carrington, T., Jardine, R., Little, R., Evans, T., and Finnie, I.: “BP Clair Ridge phase 1 - Pile drivability and capacity in extremely hard till.”

Evans, T., Finnie, I., Little, R., Jardine, R., and Aldridge, T.: “BP Clair Ridge phase 1 - Geotechnical Assurance of driven piled foundations in extremely hard till.”

Van Dijk, B., and Kolk, H.: “CPT-based design methods for axial capacity of offshore piles in clay.”

- Bienen, B., Cassidy, M., Randolph, M., and Teh, K.: "Characterisation of undrained shear strength using statistical methods."
- Hossain, M., Randolph, M., and Saunier, Y.: "Centrifuge modeling of spudcan deep penetration in multi-layered soils."
- Qiu, G., Henke, S., and Grabe, J.: "3D FE analysis of the installation process of spudcan foundations."
- Chatterjee, S., Randolph, M., White, D., Wang, D.: "Large deformation finite element analysis of vertical penetration of pipelines in seabed."
- Ting, I., Kimiaei, M., and Randolph, M.: "Advanced nonlinear hysteretic seabed model for dynamic fatigue analysis of steel catenary risers."
- Westgate, Z., Randolph, M., White, D., and Brunning, P.: "Theoretical numerical and field studies of offshore pipeline sleeper crossing."
- Van Lottum, H., and Luger, H.: "Anchor-chain-rockfill-soil interaction: evolution of design methods."
- Chen, J.Y., Gilbert, R., Murff, J.D., Young, A., and Puskar, F.: "Structural factors affecting the system capacity of jacket pile foundations."
- Jeanjean, P., Watson, P., Kolk, H., and Lacasse, S.: «The new API recommended practice for geotechnical engineering: RP 2GEO. »
- d. Society for Underwater Technology, Offshore Site Investigation and Geotechnics Conference, London, 2012:
- Jardine, R., Puech, A., and Andersen, K.: "Cyclic Loading of Offshore Piles: Potential Effects and Practical Design".
- Milatz, M., Reimann, K., and Grabe, J.: "Numerical Simulations of Hydro Sound Emissions Due to Offshore Pile Driving".
- Jeanjean, P., Spikula, D., Young, A. "Technical Vetting of Free-Fall Cone Penetrometer".
- Puech, A, Canou, J., Bernardini, C., Pecker, A., Jardine, R., Holeyman, A.: "SOLCYP: A four-Year Joint Industry Project on the Behaviour of Piles under Cyclic Loading"
- Rimov, S., Jardine, R., Silva, M., Forav, P., Tsuha, C., and Yang, Z.: "Local and Global Behaviour of Axial Cyclic Loaded Instrumented Model Displacement Piles in Sand".
- Kuo, MYH, Bolton, M., and Puech, A.: "Interface Shear Testing of Gulf of Guinea Sediments: Implications for the Design of Hot-Oil Pipelines and Suction Caissons"
- Benzaria, O., Puech, A., Le Kouby, A.: "Cyclic Axial Load Tests on Driven Piles in Overconsolidated clays"
- Guefrech, A., Rualts, G., Chenaf, N., Thorel, L., Garnier, J., and Puech, A.: "Stability of Cast in Place Piles in Sand under Axial Cyclic Loading
- Bubel, J. and Grabe, J.: "Stability of Submarine Foundation Pits"
- DeGroot, D., Lunne, T., Andersen, T., Boscardin, A.: "Laboratory Measurement of the Remoulded Shear Strength of Clays with Application to Design of Offshore Infrastructure".
- Hill, A., White, D., Bruton, D., Langford, T., Meyer, V., Jewell, R., and Ballard, J-C.: "New Framework for Axial Pipe-Soil Resistance, Illustrated by a Range of Marine Clay Datasets".
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Mana, DSK, Gourvenec, S., Randolph, M., Hossain, M.: "Effects of Gapping on the Uplift resistance of a Shallow Skirted Foundation"
- Gaudin, C., Randolph, M., Feng, X., Clukey, E. and Dimmock, P.: "Centrifuge Modelling of a Hybrid Foundation for Subsea Equipment"
- Merritt, A., Schroeder, F., Jardine, R., Stuyts, B., Cathie, D., Cleverly, W.: "Development of Pile Design Methodology for an Offshore Wind Farm in the North Sea"
- Carneiro, A., and Jardine, R.: "A Model Study of How Pre-Drilling Affects Displacement Pile Capacity in Stiff Clays"
- Byrne, T., Doherty, P., Gavin, K., and Overy, R.: "Comparison of Pile Driveability Methods in North Sea Sand".

Brunning, P. and Ishak, B.: "Pile Driving in Carbonate Soils and Rock of the Australian North West Shelf – A Case Study".

Yetginer, G., Tjelta, T., Yang, S., Lunne, T., Colliat-Dangus, JL, and Longuet, A.: "Seafloor Based Drilling and Sample Quality at Soft Clay Sites"

e. 2nd Marine Operations and Speciality Symposium, MOSS 2012, NUS, Singapore, August 2012.

Mukherjee, K., and Nagaraju, N. (2012), INSTALLATION OF OFFSHORE DRIVEN PILES – REGIONAL EXPERIENCE, 2nd Marine Operations and Speciality Symposium, MOSS 2012, NUS, Singapore, August 2012.

f. ASCE GeoCongress, Oakland, 2012:

Randolph, M.: "Offshore Geotechnics - The Challenge of Deepwater Soft Sediments".

Jeanjean, P.: "Offshore Geotechnics - State of Practice Throughout the Life of an Offshore Field."

g. Special edition of Géotechnique journal, 2012: Géotechnique, Volume 62, Issue 9, September 2012

Sultan, De Gennaro, and Puech: "Mechanical behaviour of gas-charged marine plastic sediments"

Torisu, Pereire, Gennaro, Delage, Puech: "Strain-rate effects in deep marine clays from the Gulf of Guinea"

Kovacevic, Jardine, Potts, Clukey, Brand, Spikula: "A numerical simulation of underwater slope failures generated by salt diapirism combined with active sedimentation"

Westgate, White, Randolph: "Field observations of as-laid pipeline embedment in carbonate sediments"

Cassidy, Gaudin, Randolph, Wong, Wang, Tian: "A plasticity model to assess the keying of plate anchors"

Randolph, White, Yan: "Modelling the axial soil resistance on deep-water pipelines"

h. XX Conference of the Venezuelan Geotechnical Society

Parra Rosales, J. G. "Algunos retos a la Ingenieria Geotecnia Costa Afuera en Venezuela". XX Seminario Venezolano de Geotecnia. Nov 2012 (in spanish), the "Juan F Luppini" Keynote Lecture

Vieira, N.; Parra Rosales, J.G. "Experiencias de campo en la prediccion de penetracion de spudcans en las costas de Venezuela". XX Seminario Venezolano de Geotecnia. Nov 2012 (in spanish)

i. "Geo-install", Rotterdam, 2013

Puech, A. (2013): "Effect of installation mode and loading history on the static and cyclic response of SOLCYP test piles", Proceedings, International Conference on Installation Effects in Geotechnical Engineering, Delft, March.

j. 18th ICSMGE, Paris, 2013:

Benzaria O., Puech A., and Le Kouby, A.: «Essais cycliques axiaux sur des pieux forés dans des sables denses - Cyclic axial load tests on bored piles in dense sands»

Benzaria O., Puech A., and Le Kouby, A.: «Essais cycliques axiaux sur des pieux forés dans l'argile surconsolidée des Flandres - Cyclic axial load tests on bored piles in overconsolidated Flanders clay»

Bretelle, S. and Wallerand, R.: Fondations superficielles glissantes pour l'offshore profond - methodologie de dimensionnement - Deep Offshore Sliding Footings - Design Methodology

Kim, D.J., Youn, J.U., Jee, S.H., Choi, J., Choo, Y.W., Kim, S., Kim, J.H., Kim, D.S, and Lee, J.S.: «Centrifuge test and numerical modeling for a suction bucket monopod foundation»

Rimoy, S., Jardine R., and Standing, J.: «Displacement response to axial cyclic loading of driven piles in sand - Réponse en déplacement au

chargement cyclique axial de pieux battus dans le sable»

Papers presented in the TC209 Workshop:

Andersen, K., Puech, A., and Jardine, R.: "Cyclic resistant design and parameter selection for offshore engineering and other applications"

Puech, A.: "Advances in axial cyclic pile design: contribution of the SOLCYP project."

End of administrative report

k. Proceedings of the Conference on Maritime Energy COME 2013, Hamburg, May

Luger, D. : "Anchor cast"

Puech, A.: "Advances in cyclic pile design: contribution of the SOLCYP project".