



FERRARA - ITALY - 2015

3rd COASTAL AND MARITIME MEDITERRANEAN CONFERENCE

CM²

UNION FOR THE MEDITERRANEAN

THE PO DELTA



FERRARA

**Mediterranean coasts at threat:
Hazards and challenges in the context of climate variability**

**FERRARA - ITALY
25-27 NOVEMBER 2015**



AERIAL VIEW OF THE TOWN OF VENICE



Cerema



French section

Regione Emilia-Romagna



UNIVERSITÀ
DEGLI STUDI
DI FERRARA
- EX LABORE FRUCTUS -



CONSORZIO FUTURO IN RICERCA

PRESENTATION

Pôle Mer Méditerranée (Sea Innovation and Business Cluster) and the Centre Français du Littoral Promoters of the third Coastal & Maritime Mediterranean Conference *CM*²

In Ferrara - Italy
In collaboration with the Italian partners

This conference follows up the second **Coastal & Maritime Mediterranean Conference** held in Tangier (Morocco) in 2011 planned by the Centre Français du Littoral and Pôle Mer Méditerranée but with a stress on corporation activity and intended for both French-speaking and non French-speaking Mediterranean countries. The management of the meeting is conducted in parallel with the host country: Italy in 2015.

This three-day **Mediterranean Conference** comprises two days of conference work including oral presentations and posters separated by one day dedicated to technical visits bearing on important coastal and maritime engineering projects and round tables or workshops.

The goals of this **Special Mediterranean Conference** are:

- up-to-date knowledge acquisition as far as coastal and maritime engineering in the **Mediterranean** is concerned;
- allowing exchange of ideas between specialists on concerned subjects;
- promoting comparison of analyses and experience between researchers and entrepreneurs;
- favouring contacts between decision-makers, corporations and researchers;
- presenting new material and techniques, together with the available documents (technical stands);
- diffusing information on pedagogical activities, research and training concerning coastal and maritime engineering **around the Mediterranean**;
- favouring network creation;
- promoting and implementing **Mediterranean research projects**;
- developing **Mediterranean inter-university and inter-corporation collaborations**.

THEMES OF INTEREST

1. **COASTAL RISKS MANAGEMENT IN THE MEDITERRANEAN:** *Management of flooding hazards, tsunami risk in the Mediterranean, adaptation policies to climate change ...*
2. **COASTAL AND MARITIME PORT PLANNING:** *Coastal and port structures: experiment, modeling, design and monitoring in coastal and port engineering; ecological engineering: state of the arts and perspectives, ecological restoration, wave energy production ...*
3. **SEDIMENT TRANSPORT, PROBLEMS AND SOLUTIONS:** *Coastal dynamics, modeling, instrumentation and tools for the treatment of data related to coastal dynamics, monitoring, dredging, sustainable management of sediments ...*
4. **RIVER SEDIMENT DELIVERY TO THE MEDITERRANEAN SEA:** *Impact of river basin management, river bed maintenance, recycling of bed sediments ...*

WORKSHOPS

Workshop 1: Recent developments in maritime hydraulics

EXHIBITION STANDS FOR COMPANIES

ORGANIZERS

This conference is organized by:

- **Pôle Mer Méditerranée** with its partners: the Centre Français du Littoral association – CFL, the CEREMA-EMF and the French companies concerned with the Mediterranean and the conference topics,
- **University of Ferrara** with its partners: Consorzio Futuro in Ricerca and Italian companies, research institutes and public authorities concerned with the Mediterranean and the conference topics and other international sponsors.

CM² Program

Wednesday 25 November and Thursday 26 November 2015

Department of Architecture - Palazzo Tassoni, Via della Ghiara 36, Ferrara, Italy

Wednesday 25 November 2015

MORNING

8:30-9:00 - Welcome to the Conference - Registration

9:00-9:30 - Opening session – Welcome by University Authorities

9:30-10:00: Keynote lecture:

The increasing vulnerability of river deltas in the Mediterranean

Edward J. ANTHONY (Aix-Marseilles University, IUF, CEREGE, Aix-en-Provence, France)

10:00-11:00 - Theme III – Session A

Sediment transports: Problems and solutions
(Large room 1st floor)

Chairman: Pr E. Anthony (Aix-Marseille University, France)

10:00-10:20 - Fast retreat of a barrier system due to reduced sediment supply (Bellocchio, Northern Adriatic Sea, Italy)

Duccio BERTONI, Clara ARMAROLI, Paolo CIAVOLA

10:20-10:40 - Regional sediment management strategies, Methods and tools for the Mediterranean region

Christophe BRIERE, Alessio GIARDINO

10:40-11:00 - Recent evolution of the Vendicari barrier system, Southern Sicily, Italy

Paolo CIAVOLA, Marco BIRRITTIERI

11:00-11:20 - Contribution des relevés photogrammétriques par drone pour l'analyse de la dynamique côtière – Application sur un site de la côte sableuse catalane

Rémi BELON, Ywenn DE LA TORRE, Virginie SIBERT, Xavier MOUROUX

10:00-11:20 - Theme III – Session B

Sustainable management of sediments
(Small room 1st floor)

Chairman: Dr Y. Balouin (BRGM, France)

10:00-10:20 - Caractérisation des sédiments fins des retenues hydroélectriques en vue d'une pré-orientation vers des filières de valorisation matière

Baptiste ANGER, François THERY, Daniel LEVACHER

10:20-10:40 - Feasibility study of chemical stabilization of dredged marine sediment

Ana Paula FURLAN, Andry Rico RAZAKAMANANTSOA, Yingjie LIANG, Dimitri DENELEE

10:40-11:00 - Valorisation *in situ* des sédiments anthropiques des canaux du nord de la France

Philippe DHERVILLY, Mickaël BERTRAND, Daniel LEVACHER

11:00-11:20 - Sediment's vitrification from industrial sites and their reuse as secondary raw materials for mineral wool production

Sergio CAPPUCCI, Floriana LA MARCA, Roberto FALCONE, Nicole FABRIZIO, Silvia DE POL

11:20-11:40 – Coffee break

11:40 -13:00 - Theme III – Session A

Sediment transports: Problems and solutions
(Large room 1st floor)

Chairman: Pr P. Ciavola (University of Ferrara, Italy)

11:40-12:00 - The role of particle shape on pebble transport in a mixed sand and gravel beach (Portonovo, Italy)

Edoardo GROTTOLO, Duccio BERTONI, Paolo CIAVOLA, Alessandro POZZEBON

12:00-12:20 - Etude du fonctionnement hydro-sédimentaire de la zone portuaire de Sidi Bou Saïd, Tunisie

Wissem EL GHARBI, Noomane HAQUEL, Hedia SALHI, Pierre FARNOLE

12:20-12:40 - Sediment budget and management of the Veneto

11:40 -13:00 - Theme III – Session B

Sustainable management of sediments
(Small room 1st floor)

Chairman: Pr D. Levacher (Caen University, France)

11:40-12:00 - Rheological behaviour of marine sediments for assessing nautical depth

Ahmed BENAMAR, Anne PANTET, Sébastien BRASSELET, Frédérique BOURDIN

12:00-12:20 - Monitoring turbidity and sediment re-suspension induced by channel dredging and subaqueous disposal in a deficit lagoon

Annelore BEZZI, Raffaella PIANI, Simone PILLON, Marco LIPIZER, Antonio BRATUS, Giorgio FONTOLAN

beaches, Italy: an application of the modified Littoral Cells Management System (SICELL)

Giorgio FONTOLAN, Annelore BEZZI, Davide MARTINUCCI, Simone PILLON, Chiara POPESSO, Federica RIZZETTO

12:40-13:00 - Sustainable beach design for Raf Raf, Tunisia

Nicholas GRUNNET, Sten KRISTENSEN, Kasper KAERGAARD, Jort WILKENS, Béchir NASRA

12:20-12:40 - DTA and TGA of organic estuarine sediments. Application to the reusing of dredged materials

Alain GROVEL

12:40-13:00 - L'envasement du barrage de Bouhanifia : dragage et valorisation des sédiments

Fatiha KAZI AOUAL-BENSLAFA, Mohammed AMEUR, Belkacem MEKERTA, Abdelaziz SEMCHA

13:00-14:00 – Lunch

AFTERNOON

14:00-16:00 - Theme I – Session A **Coastal risk management in the Mediterranean** **(Large room 1st floor)**

Chairman: Dr D. Pham Van Bang (CEREMA, France)

14:00-14:20 - Video monitoring of soft coastal defenses at the Lido of Sète, France

Yann BALOUIN, François LONGUEVILLE, Yohan COLOMBET

14:20-14:40 - The role of the Wadi flood in the spatio-temporal sedimentary morphodynamics evolution in an arid/semi-arid beach: Wadi Ksob and Essaouira beach (Morocco)

Abdelhadi EL MIMOUNI, Lahcen DAOUDI, Fatima Zahra OMDI, Laarbi LAHMADI, Fouad LOTFI

14:40-15:00 - Le risque de tsunami dans quelques pays méditerranéens (France, Italie, Espagne et Turquie) : connaissance de l'aléa, perception et gestion du risque

Lydie GOELDNER-GIANELLA, Delphine GRANCHER, Nuray KARANCI, Nilay DOGULU, Utku KANOGLU, Stefano TINTI, Filippo ZANIBONI, Franck LAVIGNE, Daniel BRUNSTEIN

15:00-15:20 - Systèmes de protection contre les submersions marines Retour d'expérience Xynthia. Conclusions des études de cas

Marc IGIGABEL, Yves NEDELEC, Nicolas FLOUEST, Nathalie BERENGER, Patrick CHASSE, Alexis BERNARD, Christian PITIE

14:00-16:00 - Theme II – Session B **Coastal and port maritime planning** **(Small room 1st floor)**

Chairman: Dr. M. Sanchez (Nantes University, France)

14:00-14:20 - Géocorail® pour la protection contre l'érosion et l'affouillement aux pieds des ouvrages maritimes

Brahim BENAÏSSA, Nicolas VERJAT, Marc JEANNIN, Alaric ZANIBELLATO

14:20-14:40 - Estimation du tassement de la plateforme de l'extension du port d'Alger renforcé par des colonnes ballastées

Sadok BENMEBAREK, Zakaria BOURAOUI, Naima BENMEBAREK, Fatima DERIAS

14:40-15:00 - Efficient inspection work of hydraulic structures including on-site physical testing

Baerbel KOPPE, Marc GUTERMANN

15:00-15:20 - Technique non destructive innovante pour la détermination de la tension dans des tirants d'ancrage

Laurent MITAÏNE, Jean-Jacques RINCENT

15:20-15:40 - "OPP Amers" : Prendre la mer pour regarder la terre
Odile JACQUEMIN, Jean-Louis PACITTO

15:40-16:10 – Coffee break

16:10-17:10 - Theme I – Session A **Coastal risk management in the Mediterranean** **(Large room 1st floor)**

Chairman : Pr. G. Fontolan (University of Trieste, Italy)

16:10-16:30 - Modélisation numérique de l'aléa de submersion appliquée l'élaboration des plans d'évacuation et à la gestion de crise, exemple de la commune de Leucate

Alexandre NICOLAE LERMA, François PARIS, Sylvain ELINEAU, Yann BALOUIN, Sophie LECACHEUX, Paul DURAND, Brice

16:10-17:10 - Theme II – Session B **Coastal management - New approaches** **(Small room 1st floor)**

Chairman: G. Herrouin (Consultant, Pôle Mer Méditerranée, La Seyne-sur-Mer, France)

16:10-16:30 - État d'avancement d'un guide sur la réversibilité des éoliennes offshore

Julie DROIT, Hervé DITCHI

16:30-16:50 - Marine ecological engineering: a sustainable solution for coastal and port infrastructures

ANSELME, Stéphanie DEFOSSEZ, Lydie GOELDNER GIANELLA
16:30-16:50 - Coastal flood risk in Emilia-Romagna (Italy): the sea storm of February 2015

Luisa PERINI, Lorenzo CALABRESE, Samantha LORITO, Paolo LUCIANI

16:50-17:10 - Manipulation des MNT haute résolution pour détecter les obstacles aux submersions marines et cartographier les phénomènes - Exemples sur la côte méditerranéenne française

Céline TRMAL, Frédéric PONS

Julie R. PERSON, Manon L. PEDRONI

16:50-17:10 - Création d'un outil Arcgis pour l'évaluation de la submersion marine et de la sensibilité à l'érosion – Application sur les plages de poche de Haute-Corse

Rémi BELON, Amandine CALISTRI, Grégoire DECTOT

17:10-18:10 – Poster session

Thursday 26 November 2015

MORNING

8:30-9:00 - *Welcome to the conference - Registration*

9:00-9:30 - *Opening session*

9:30-10:00: *Keynote lecture:*

Sea energies: Mediterranean potential

Pr. Diego VICINANZA (Seconda Università degli Studi di Napoli, Italy)

10:00-11:20 - Themes I & II – Session A

Impacts on coastal planning

(Large room 1st floor)

Chairman: Pr. D. Vicinanza (Seconda Università di Napoli, Italy)

10:20-10:40 - Réponse des populations phytoplanctoniques (kystes et formes végétatives) face aux changements environnementaux dans les lagunes de Sidi Moussa et Oualidia, Marocand Oualidia Lagoons

Lamia DAGHOR, Touria HSSAIDA, Naima HAMOUMI, Sara CHAKIR, Btissam ENEFFAH, Mohamed FRAIKCH

10:00-11:20 - Theme IV – Session B

Sediment delivery to the sea

(Small room 1st floor)

Chairman : Pr. P. Billi (University of Ferrara, Italy)

10:00-10:20 - Distribution des sédiments fins depuis le bassin versant de l'oued Isser à son embouchure en Méditerranée (Boumerdès, Algérie)

Mohamed BOUHMA DOUCHE

10:20-10:40 - Sediment delivery at sea by the Magra River, Northern Italy

Sergio CAPPUCCI, Iolanda LISI, Paolo CIAVOLA, Lorenzo ROSSI

10:40-11:00 - Impact hydro-morphologique en aval du barrage d'Ouizert sur son affluent principal l'oued Sahout (Nord-Ouest d'Algérie)

Habib GUESSAS, Belkacem MEKERTA, Abdélaziz SEMCHA, Fatiha KAZI-AOUAL, Mohammed AMEUR

11:00-11:20 - Distribution transitoire des matières en suspension dans un écoulement unidirectionnel non uniforme

Martin SANCHEZ

11:20-11:40 – Coffee break

11:40 -13:00 - Theme I – Session A

Storm management

(Large room 1st floor)

Chairman: Dr. C. Armaroli (University of Ferrara and CFR Italy)

11:40-12:00 - Impacts of Storm Dirk on a gravel replenished shore: Preliminary results on Nice beach, French Riviera

11:20 -13:00 - Workshop I – Session B

Recent developments in maritime hydraulics

(Small room 1st floor)

Chairman: Dr J. Bougis (Consultant, Opio, France)

11:40-12:00 - Waves and currents propagation through porous media: model experiments and scale effects

Olivier COHEN, Rémi DUMASDELAGE, Edward J. ANTHONY
12:00-12:20 - A conceptual morphodynamic model including storm impacts for macrotidal barred beaches
Mathieu GERVAIS, Yann BALOUIN, Raphael CERTAIN
12:20-12:40 – Mitigating beach erosion in storm conditions with a submerged breakwater: an experimental study
Mathieu GERVAIS, Damien PHAM-VAN-BANG, Vincent VIDAL, Marissa YATES, Michel BENOIT
12:40-13:00 - Coarse-grained beach response after storms in three Italian sites
Edoardo GROTTOLI, Duccio BERTONI, Paolo CIAVOLA

Gwendoline ARNAUD, Vincent REY, Damien SOUS, Julien TOUBOUL, Fabrice GOUAUD
12:00-12:20 - Détermination dynamique de la production naturelle des aérosols marins côtiers en Méditerranée occidentale
Rabia MERROUCHI, Soumia MORDANE
12:20-12:40 - La méthode de décomposition du domaine : Application à un problème de soutirage
Soumia MORDANE, Khalid ADNAOUI, Mohamed LOUKILI, Noureddine TOUNSI, Mohamed CHAGDALI
12:40-13:00 - Wave-bottom-current interaction in the presence of a 3D bathymetry: effects on the vertical sheared current and enhancement of transverse wave modes
Vincent REY, Julien TOUBOUL

13:00-14:00 – Lunch

AFTERNOON

14:00-16:00 - Theme III – Session A Sediment transports: Problems and solutions (Large room 1st floor)

Chairman: Pr. M. Sedrati (University of South Brittany, France)

14:00-14:20 - The historical practice of disposal of dredged sediments in the Grado and Marano lagoon: evaluation of geomorphological, evolutionary and functional perspective of the resulting artificial salt-marshes

Annelore BEZZI, Eleonora DRIUSSO, Davide MARTINUCCI, Giorgio FONTOLAN

14:20-14:40 - Feasibility long-term numerical study of a mega-nourishment in the Northern Adriatic

Enrico DUO, Alessandra CASARI, Paolo CIAVOLA

14:40-15:00 – Application of the SfM photogrammetry for morphological changes in various beach environments: Dugi Rat case study (Croatia)

Kristina PIKELJ, Suzana ILIĆ, Mike R. JAMES, Branko KORDIĆ

15:00-15:20 - Spatial and temporal evolution and morphodynamic zonation of the Ravenna shoreface

Flavia SISTILLI, Federico SCARELLI, Francesco STECCHI, Stefano FABBRI, Luigi CANTELLI, Giovanni GABBIANELLI

15:40-16:00 - A new beach nourishment strategy for Bibione littoral

Massimo TONDELLO

14:00-16:00 - Theme III – Session B Management of contaminated sediments (Small room 1st floor)

Chairman: Dr G. Russo (University of Cassino and Southern Lazio, Italy)

14:00-14:20 - Degré de pollution marine par les métaux lourds dans les sédiments superficiels des principaux ports algériens

Farid ATROUNE

14:20-14:40 - Etude de la pollution des vases marines des ports algériens par les hydrocarbures

Djamila BENYEROU, Nasr Eddine BOUDJENANE, Mansour BELHADRI

14:40-15:00 - Sediment Characterisation of Favignana Harbour, Egadi Island, Italy

Sergio CAPPUCCI, Floriana LAMARCA, Massimo MAFFUCCI, Riccardo FERRANTINI

15:00-15:20 - Caractérisation physique et environnementale des sédiments du port de pêche de Sfax

Nesma FEKI, Mnissi MBARKA

15:40-16:00 - Dredged sediments treatment by electrokinetics

Yue SONG, Ahmed BENAMAR, Mohamed AMMAMI

16:00-16:30 – Coffee break

16:30-17:50 - Theme II – Session A
Sediment transports: Problems and solutions
(Large room 1st floor)

Chairman: Dr K. Pikelj (Zagreb University, Croatia)

16:30-16:50 - Etude océanographique et géophysique de la future centrale électrique

Mohamed Amine ELHADDAD, Adel ZERMOUT, Hamid BOUALI

16:50-17:10 - Video based assessment of coastal erosion impact on beach attendance. Application to coastal management of Valras beach, France

Didier RIHOUEY, Damien DAILLOUX

17:10-17:30 - AlgoBox® : Un outil écologique pour la régénération des pieds de dunes grâce aux échouages de macro-algues

Mouncef SEDRATI, Julia COCHET

16:30-17:50 - Theme III – Session B
Sustainable management of sediments
(Small room 1st floor)

Chairman: Dr S. Cappucci (ENEA, Italy)

16:30-16:50 - Exploitation des sables de plage et des dunes côtières. Impact sur l'équilibre du littoral entre Boumerdès et Zemmouri El Bahri. (Est-Algérois) Algérie

Hanifa HABIKI, Lazreg BENSLAMA

16:50-17:10 - Résistance au cisaillement des sédiments - Utilisation du T-bar en laboratoire et effet du diamètre

Daniel LEVACHER, Andry RAZAKAMANANTSOA, Ritesh GUPTA

17:10-17:30 - Lime treatment procedures for the reuse of dredged marine sediments

Giacomo RUSSO, Dimitri DENELEE, Paolo CROCE, Giuseppe MODONI

17:30-17:50 - Conception d'éco-matériaux à partir de sédiments

Abdélaziz SEMCHA, Belkacem MEKERTA, Fatiha KAZI-AOUAL, Mohamed AMEUR, Hafida MAAROUF

17:50-18:20 – Closing session and announcement for CM2 - 2017

20:00 – Gala dinner at the Castle of Ferrara (Imbarcadero n.1)

Friday 27 November 2015

MORNING

Technical visits of Venice arsenal and restored harbour zones

8:00 - Bus departure to Venice from Largo Castello (next to the Castle, in Ferrara)

10:15 - Arrival in the city center of Venice

11:00 - Arrival in Arsenal

11.45 - Visit of the « control room »

12.15 - Visit of the dry docks

12:45-14:00 - Lunch on site (Arsenal dining hall)

14:00 - Boat back to Venice

15:00 - Bus back to Ferrara

During the first two days of the Conference

Permanent poster session

1.- Etude de la bioaccumulation des métaux lourds chez les organismes aquatiques de oued Moulouya, outil au service d'une gestion intégrée de la zone côtière (GIZC) du littoral méditerranéen du Maroc Nord Oriental (Saidia)

Yahya BASRAOUI, Abdelhafid CHAFI

2.- Cartographie du fond marin par les méthodes de sismique réflexion et du sonar latéral

Souad BATATA SABETE

3.- Le Réseau Marocain des Sciences et Ingénierie de la Mer (MARSIMER)

Naima HAMOUMI

4.- Une approche paramétrique pour l'analyse du pouvoir d'adsorption du cadmium sur une bentonite naturelle saturée

Azzedine OULARBI

SCIENTIFIC COMMITTEE

Presidents

BARDEY Philippe, Pôle Mer Méditerranée-ACRI, Toulon, France and CIAVOLA Paolo, University of Ferrara, Italy

REVIEW COMMITTEE

Presidents

ARMAROLI Clara, Consorzio Futuro in Ricerca, Italy and SANCHEZ Martin, University of Nantes, France.

ORGANIZING COMMITTEE

President

CIAVOLA Paolo, University of Ferrara, Italy.

Vice- Presidents

ARMAROLI Clara, Consorzio Futuro in Ricerca, Italy; RAYMOND Eve, Pôle Mer Méditerranée, Toulon, France.

Members

BERTONI Duccio (University of Ferrara), DUO Enrico (University of Ferrara), GROTTOLI Edoardo (University of Ferrara).

French and Italian companies, institutes and public authorities

Consorzio Futuro in Ricerca, ENEA, Consiglio Nazionale delle Ricerche, Centre français du Littoral, CFL – Paralia, Nantes, France; Centre d'études et d'expertise sur les risques, l'environnement, la mobilité et l'aménagement, CEREMA-EMF, Aix-en-Provence and Compiègne, France; Pôle Mer Méditerranée, Toulon, France; SCS-Ingénierie, Opio, France ; Regione Emilia-Romagna.

CONFERENCE BULLETIN CONSULTATION

Conference bulletin is permanently available on line on website <http://www.paralia.fr>

Scientific secretariat for the special Coastal and Maritime Mediterranean Conference

Mailing address:

M. Martin Sanchez,
UFR Sciences, UMR 6112 CNRS LPG
2, rue de la Houssinière – BP 92208
44322 Nantes cedex 03 – France

Secretariat contact:

Phone : 00 33 (0)2 51 12 55 51
Fax : 00 33 (0)2 51 12 52 68
E-Mail : redaction@paralia.fr
Site web: <http://www.paralia.fr>

CONFERENCE VENUE

PALAZZO TASSONI - DEPARTMENT OF ARCHITECTURE, VIA DELLA GHIARA 36, FERRARA, ITALY