

COUNCIL OF EUROPE - EUR-OPA MAJOR HAZARDS AGREEMENT

European Centre on Geomorphological Hazards - CERG

FORM-OSE Post-graduate Training School

'Coastal hazard assessment and risk management'



Working programme & practical information

19-25 June 2011

University of Caen Basse-Normandie

Department of Geography, GEOPHEN - LETG UMR 6554 CNRS

Aim and objectives:

In recent years, the interest in **coastal instability** has significantly increased due to an increasing frequency of disasters in different parts of the World, and particularly in Europe. Slope processes (cliff rockfalls, coastal slides, storm surges, sea-level rise and shoreline retreat) presently have a significant impact on the built environment and infrastructure. The topography, geology, present and past climatic conditions and human modification of the landscape result in geomorphological processes being active along many coastal areas. Improved forecasting of medium to long-term coastal hazards in the context of progressive climate change is required to assess the level of potential impacts on land use, maintenance and development of the built environment, transport infrastructure and utilities. This will lead to the development of appropriate monitoring, management, design and remediation strategies.

The aim of the course is to provide the participants with updated knowledge on traditional and innovative multi-disciplinary methods and techniques for the analysis of geomorphological coastal instability processes and related hazards and risks.

The attendees will gain knowledge on the research framework used to address coastal hazard and risk assessment and management, including:

- principles of sustainable coastal risk management strategies,
- techniques for coastal process investigation and monitoring,
- methods for quantitative hazard and risk analysis at various temporal and spatial scales,
- implementation of the risk analysis in land-use planning procedures.

Field-trips will demonstrate examples of management strategies for specific types of coasts (sandy coasts, hard rock cliffs, soft rock slopes).

Organisation:

The Post-Graduate Training School is taking place within the framework of the **European training programme on risk sciences** (FORM-OSE). FORM-OSE is part of the training programme of the *EUR-OPA Agreement* of the *Council of Europe* and aims at training in risk sciences at European level.

The training school is organized by the '**European Centre on Geomorphological Hazards**' (CERG, Strasbourg, France), which is one of the 27 centres of the *EUR-OPA Agreement*, in close collaboration with the '*Euro-Mediterranean Centre on Insular Coastal Dynamics*' (ICoD, Valletta, Malta).

Further support is provided by the *University of Caen Basse-Normandie* (Department of Geography, GEOPHEN - LETG UMR 6554 CNRS) and the *International Association Geomorphologists* (IAG).

The course include theoretical lessons, field visits and practical training to enable the participants to become familiar with high standard methods for the recognition, monitoring and modelling of coastal processes. In the evening, conferences will be organized.

Organization committee:

Prof. Stéphane. COSTA, University of Caen Basse-Normandie, (France)

Prof. Olivier MAQUAIRE, CERG Executive Secretary & University of Caen Basse-Normandie, (France)

Dr. Jean-Philippe MALET, CERG co-Executive Secretary & University of Strasbourg (France)

Dr. Alessandro PASUTO, Consiglio Nazionale delle Ricerche, Padova, (Italy)

Prof. Mauro SOLDATI, University of Modena e Reggio Emilia, (Italy),

Dr. Jose Luis ZEZERE, CERG Executive Member & Faculty of Geography, Lisbon (Portugal)

Working programme:

Sunday, June 19th, 2011

Arrival in Caen (Airport or Railway station)

Afternoon: Registration and ice-breaker from 4pm onwards in the Department of Geography (University, main campus, Building '1er cycle', Room AC 129- see the map-).

16:00 – 16:30	Course registration and technical information	O. Maquaire, S. Costa
16:30 – 17:30	Round table: field of research of the students*	
17:30 – 18:30	Geology / geomorphology / history of risks on the Normandy coast	J. M. Cador
18:30 – 20:00	<i>Norman ice-breaker (Norman cheeses, cider, ...)</i>	

*Each student will have 3 minutes to present his/her field of research. Each student may prepare one overhead for his/her presentation

Monday, June 20th, 2011

Theoretical lessons:

Morning: Coastal risks, disasters & lessons learned

Afternoon: Techniques for analysing coastal processes (shoreline retreat, slope evolution and underwater slope recognition)

Department of Geography, Building '1er cycle', Room AC 129

9:00 – 9:30	Opening ceremony	O. Maquaire, S. Costa, M. Fort, E. Fouache
9:30 – 10:30	Actual and past processes for different coastal shorelines	E. Anthony
10:30 – 11:00	<i>Coffee break</i>	
11:00 – 12:00	Sea level relative variations and coastal behaviour	H. Regnaud
12:00 – 13:00	Tsunamis, Storms and storm surges	A. Micallef
13:00 – 14:30	<i>Lunch (student restaurant -RU B, main Campus-)</i>	
14:30 – 15:30	Earth observatory data and image processing for coastal hazard assessment	C. Delacourt
15:30 – 16:30	Multi-method monitoring	A. Pasuto
16:30 – 17:00	<i>Coffee break</i>	
17:00 – 18:00	Terrestrial Lidar & GPS	J.-P. Malet
18:00 – 19:00	Geomorphological mapping and survey for rockcliffs and sandy beaches	A. Henaff
19:00 – 20:30	<i>Dinner (student restaurant -RU B, main Campus-)</i>	
20:30 – 22:00	Managing coastal risks in a changing climate	R. McInnes

Tuesday, June 21st, 2011

Practical training in the field: On-site techniques for the investigation and survey of coastal instability processes – Villerville landslides (Calvados, Lower Normandy)

8:00 – 9:00	Bus travel Caen - Villerville	
9:00 – 10:00	History, morphological context, landslide mechanisms	O. Maquaire C. Lissak-Borgés
10:00 – 18:00*	3 thematic groups (2h30 hours for each): - LIDAR and GPS acquisition - Hydrological field investigations & survey: - Geomorphological mapping, Geotechnical field investigations (Penetration test, inclinometry, ...)	J.-P. Malet T. Boogard A. Pasuto M. Soldati
18:00 – 19:00	Bus travel Villerville - Caen	
19:30 – 20:30	<i>Dinner</i> (student restaurant -RU B, main Campus-)	
> 21:00	<i>Music Fest in the town centre</i>	

* Lunch will be provided as picnic

Wednesday, June 22nd, 2011

Practical training in computer processing: analysis of the data acquired in the field

University, main campus, Building '1er cycle', Room AC 129

9:00 – 10:30	Data processing (1): - Geomorphological, geotechnical and hydrological data integration - LIDAR and GPS data processing	J.-P. Malet T. Boogard A. Pasuto M. Soldati
10:30 – 11:00	<i>Coffee break</i>	
11:00 – 12:30	Data processing (2): - Geomorphological, geotechnical and hydrological data integration - LIDAR and GPS data processing	J.-P. Malet T. Boogard A. Pasuto M. Soldati
13:00 – 14:30	<i>Lunch</i> (student restaurant -RU B, main Campus-)	
14:30 – 18:00	Data processing (3): - Geomorphological, geotechnical and hydrological data integration - LIDAR and GPS data processing	J.-P. Malet T. Boogard A. Pasuto M. Soldati
18:00 – 18:15	IAG Training programme	M. Soldati
18:15 – 19:30	Visit of the M2C Laboratory: swell flumes,	M. Font D. Mouazè
19:30 – 20:30	<i>Dinner</i> (student restaurant -RU B, main Campus-)	

Thursday, June 23rd, 2011

Field trip (1): Mont Saint Michel bay (UNESCO World Heritage Site)

Long-term management of the bay and its natural and anthropic evolution

8:00 – 10:00	Bus travel Caen - Mont Saint Michel bay	
10:00 – 11:00	<i>Information Centre</i> : General explanation on the works in the bay	R. Desguée M. Charon-Burnel
11:00 – 12:00	<i>Dam over the river Couesnon</i> : explanation on the hydraulic and hydro-sedimentary role of the works	R. Desguée M. Charon-Burnel
12:00 – 13:30	<i>Lunch will be provided as picnic or restaurant</i>	
13:30 – 17:00*	Free visit of the Mont Saint Michel abbey	
17:00 – 19:00	Bus travel Mont Saint Michel bay - Caen	
19:30 – 20:30	<i>Dinner</i> (student restaurant -RU B, main Campus-)	

Friday, June 24th, 2011

Theoretical lessons:

Morning: Methods for quantitative coastal hazard and risk assessment

Afternoon: Example of coastal risk management

Department of Geography, Building '1er cycle', Room AC 129

8:30 – 9:30	Landslide mechanisms and hazard in coastal slopes	E. Bromhead
9:30 – 10:30	Landslide susceptibility and landslide hazard in coastal slopes	J.-L. Zezere
10:30 – 11:00	<i>Coffee break</i>	
11:00 – 12:00	Coastal risk assessment: examples for storm surges on low valleys	S. Suanez
12:00 – 13:00	Design of coastal protection: Physical modelling of coastal protection	D. Mouazé
13:00 – 14:30	<i>Lunch</i> (student restaurant -RU B, main Campus-)	
14:30 – 15:30	Coastline at Risk: Example of Malta	M. Soldati
15:30 – 16:30	Sustainable coastal risk management in coastline of UK and Malta	V. May
16:30 – 17:00	<i>Coffee break</i>	
17:00 – 18:00	Coastal management: patrimony management in France	I. Rauss
18:00 – 19:00	Coastal management: mitigation measures & monitoring networks	O. Maquaire J.-P. Malet
> 20:00	<i>Social Dinner (restaurant in the city)</i>	

Saturday, June 25th, 2011

Field trip (2):

The Etretat-Fécamp shoreline (Seine-Maritime). Risks associated to hard rock cliffs and storm surges

8:00 – 9:30	Bus travel Caen - Etretat	
9:30 – 16:30	<p><i>Stop 1:</i> <i>Etretat:</i> morpho-structural and morpho-dynamic context, storm surges; <i>Stop 2:</i> <i>Fécamp :</i> cliff falls and retreat of the shoreline (value, average, ...); <i>Stop 3:</i> <i>Cap d'Ailly:</i> Hard rocks cliffs (chalk), Triggering processes, intensity/frequency relations <i>Stop 4:</i> <i>Dieppe Semaphore:</i> triggering processes; problem with Harbour sanding up, etc.</p>	S. Costa P. Letortu
16:30 – 18:00	Bus travel Dieppe - Caen	
18:00 – 19:00	Evaluation of course, Final discussion round & workshop closure	O. Maquaire S. Costa
19.00	End of course	

* Lunch will be provided as picnic

Practical information:

1. Location of the Training School

The FORMOSE Post-Graduate training course will take place at the University of Caen Basse-Normandie, Campus 1, Building '1er cycle', Department of Geography, 1st floor, Room AC 129. Some additional information's are available at: <http://www.unicaen.fr/>

See the map page 11 for the location of the building '1er cycle'

☀ Rendez-vous on Sunday evening (starting from 4 PM)

Sunday's the building is closed, but from 3:30 PM to 4 PM, a colleague will wait for you at the South main door (50 m from the tramway station 'University', *see the photo below*).

After 4 PM, you are invite to call Olivier Maquaire (+33 6 87 82 97 09).



2. Arrival

By train: direct train from Paris (*Gare Saint-Lazare*)

Sunday 19 th June	
Paris	Caen
9h10	10h57
9h45	11h51
11h45	13h51
14h45	16h51
16h10	17h57
17h45	19h51
19h10	20h57

Sunday 26 th June	
Caen	Paris
7h42	9h57
8h58	10h46
10h08	12h16
13h08	15h16
14h58	16h45
16h08	18h16
17h08	19h16

1. From the Caen train station, take the Tramway A ('Campus 2' direction) or B ('Hérouville-saint-Clair' direction)
2. Stop at the 'University' station

Purchasing tickets for public transportation:

You can purchase directly your tickets in all ticket machines at the tramways station. Ticket machines provide instructions in English. An adult single ticket is available for 1,20 €.

Additional information is available on the TWISTO web site:

<http://www.twisto.fr/>

See the map of the tramway network.



Map of the tramway network

By car:

1. You could access to the parking of the main campus by the street 'Avenue d'Edimburg' or by 'rue du magasin à poudre' (see the black arrow on the map page 11) (but in order to open the gate, you have to announce 'Département de Géographie, cours intensif Formose, O. Maquaire').

By plane:

1. From the airport, take a taxi

By ferry-boat:

1. From the ferry station, take a taxi or the bus shuttle.

3. Registration and fees

Registration fees (educational services, travelling facilities during the Post-Graduate Training School, cocktails & coffee breaks, certificate of attendance) are fixed at €250 per participant. Fees for recipients of grants are €100.

The *European Centre on Geomorphological Hazards* offers the lodging and the meal to the students from Sunday 19 June (4 PM) to Saturday 26 June (7 PM).

The registration to the intensive school will take place at the Department of Geography, Building '1er cycle', 1st floor, Room AC 129.

How to pay the fees?

On-site, we will accept payments by cash or French bank check.

Pre-registration and payment is available only by bank transfer* to:

CERG-Formose Normandy School

Bank: Société Générale, 34 Boulevard d'Anvers, F-67000 Strasbourg

IBAN : FR76 3000 3023 6800 0500 2278 291

BIC – SWIFT code: SOGEFRPP

**you have to pay also the bank charges*

4. Grants

Several grants of €300 to cover travelling costs for MSc and PhD students from southern Mediterranean and Eastern Europe are offered by *EUROPA* and *IAG*.

This amount will be pay back to the recipients by international bank transfer just after the training school.

Each recipient must to give to the organisation:

- 1) the original of the bills and copy of the transport tickets, etc.,
- 2) the bank information with:
 - Name of the bank:
 - Address of the bank:
 - IBAN:
 - BIC – SWIFT code:

5. Lodging and meals

Students will be lodged in individual rooms from CROUS in the main Campus at the student residence '*Cité Universitaire, Les Tilleuls*' from Sunday 19th evening to Saturday 25th morning.

See the map for the location of the 'Cité Universitaire, Les Tilleuls'.

On the request, students have the possibility to get the rooms Saturday 18th evening and leave its Sunday 26th June in the morning (without any extra charge, but the meals and breakfast will be not included, excepted during the school time -see point 3-).

Lunch and dinner:

Lunches and dinners will be serving at the student restaurant 'Restaurant B' (in order to access to the restaurant, each student will receive the tickets from the organization).

Breakfast:

Breakfast will be serving at 'the '*Oxigène B*' from 7 AM to 8 AM, Ground floor of the 'Restaurant B' (in order to access to the restaurant, each student will receive the tickets from the organization).

See the map for the location of the "Restaurant B'.

6. Material requested for the course

For working at field, you will need:

- Note-book, camera and if you have geological compass, garmins, etc.
- Good shoes, field clothes, solar glasses, solar cream, umbrella, raincoat, etc.

For the process of data acquired in the field, students are invited to bring their own laptop.

Teaching team:

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Invited personality:

Monique FORT, *University of Paris VII, Jussieu, President of the French Geomorphology Group (GFG), Paris, France*. Email: fort@paris7.jussieu.fr

Eric FOUACHE, *University of Paris IV Sorbonne, Vice-President International Association Geomorphologists (IAG), Paris, France*. Email: eric.g.fouache@wanadoo.fr

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