



THE UNIVERSITY OF RHODE ISLAND  
COLLEGE OF THE ENVIRONMENT AND LIFE SCIENCES



Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile



UNIVERSITÀ DEGLI STUDI DI BARI ALDO MORO



Istituto Nazionale di Geofisica e Vulcanologia

## IGCP Project 639 “Sea Level Change from Minutes to Millennia”

*Crossing Southern Italy...a travelling meeting from Taranto to Siracusa*

### Third Annual Meeting

**Taranto (Puglia) – Siracusa (Sicilia)**

**16<sup>th</sup> - 23<sup>rd</sup> September 2018**

**4<sup>th</sup> Meeting Announcement**

Project Leaders

Simon Engelhart, Goesta Hoffmann, Fengling Yu, Alar Rosentau

Meeting Leaders

Giuseppe Mastronuzzi, Fabrizio Antonioli, Marco Anzidei, Massimo Moretti, Giovanni Scicchitano.

This is a joint meeting with **INQUA project**:

- CMP1701P: “Late Quaternary record of coastal inundation due to earth surface deformation, tsunamis and storms”
- CMP1601P “HOLSEA”
- CMP1603P “MOPP-MEDFLOOD”

*under the patronage of*



**Organization managed by**



**ENVIRONMENTAL SURVEYS**

# **IGCP Project 639 “Sea Level Change from Minutes to Millennia”**

## ***Crossing Southern Italy...a travelling meeting from Taranto to Siracusa***

**Taranto (Puglia) – Siracusa (Sicilia)  
16<sup>th</sup> - 23<sup>rd</sup> September 2018**

### *GENERAL PROGRAMME 16 – 23 September 2018*

---

<b>September 16<sup>th</sup></b>	
19.00	Ice-breaker party in the Aragonese Castle (Taranto)

---

<b>September 17<sup>th</sup></b>	
08.30	Registration
09.00	Welcome
09.30	Scientific Session
13.30	Lunch
14.30	Poster Session
15.50	Scientific Session
18.20	End of the day
20.30	Social event in Taranto

---

<b>September 18<sup>th</sup></b>	
09.00	Scientific Session
13.30	Lunch
15.00	Scientific Session
17.40	End of the day <i>Dinner free</i>

---

<b>September 19<sup>th</sup></b>	
08.00	Field trip (Apulia-Calabria Ionian side)
18.00	Arrival in Sibari (Calabria)
20.30	Conference Dinner

---

<b>September 20<sup>th</sup></b>	
08.00	Field trip (Calabria Tyrrhenian side)
18.00	Arrival in Reggio Calabria <i>Dinner free</i>

---

<b>September 21<sup>th</sup></b>	
08.00	Field trip (Sicily Ionian side)
18.00	Arrival in Siracusa <i>Dinner free</i>

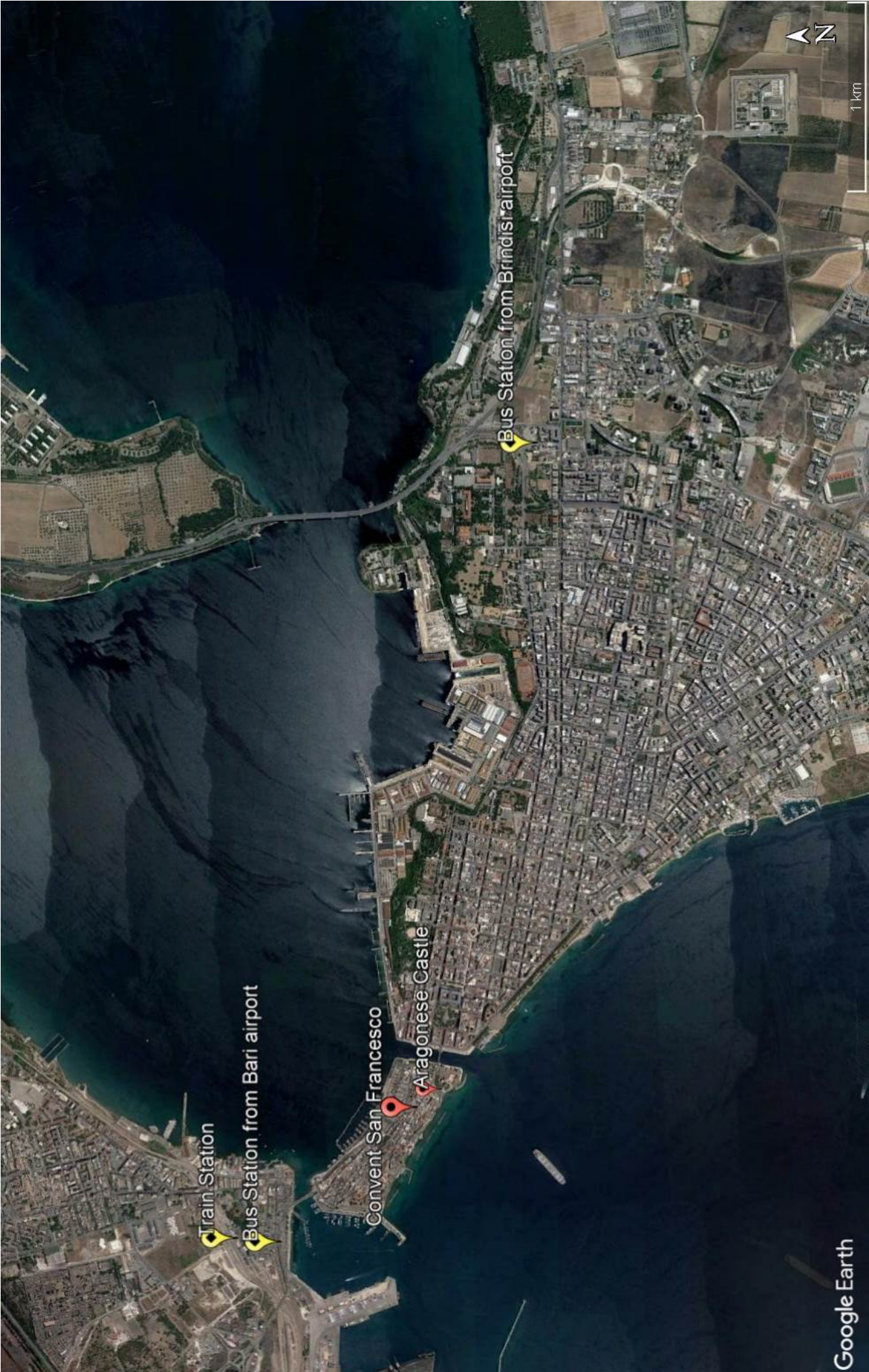
---

<b>September 22<sup>th</sup></b>	
08.00	Field trip (Sicily Ionian side)
18.00	Arrival in Catania <i>Dinner free</i>

---

<b>September 23<sup>th</sup></b>	
08.00	<i>Depart to Catania airport Optional Workshop</i>

---





## September 16<sup>th</sup>, Sunday

19.00 Ice-breaker party at the Aragonese Castle (Taranto)

## September 17<sup>th</sup>, Monday

8.30 - 9.00 Registration

9.00 – 9.30 Welcome

9.30-13.30 Scientific Session

### TOPIC :COASTAL GEOMORPHOLOGY AND SEA-LEVEL CHANGES

*Chairman: Antonioli F., Brückner H.*

- |              |  |   |
|--------------|--|---|
| <u>9.30</u>  | <b>Relative sea level rise projections and flooding hazard by 2100 along the main coastal plains of the Mediterranean: insights from the SAVEMEDCOASTS project</b> | <b>M. Anzidei</b> , P. Patias, C. Georgiadis, F. Doumaz, D. Kaimaris, C. Pikridas, C.A. Brunori, X.I. Loizidou, M. Michetti, D. Petsa, D. Orthodoxou, S. Torresan, E. Furlan, M.L. Trivigno, M. Greco, E. Serpelloni, A. Vecchio, L. Pizzimenti |
| <u>9.50</u>  | <b>Raised MIS 5a paleoshorelines in the northwestern coast of Calabria (southern Apennines, Italy)</b>   | <b>Cerrone C</b> , A. Ascione, G. Balassone, A. Mormone, G. Robustelli, M. Soligo, P. Tuccimei  |
| <u>10.10</u> | <b>Variation of coastal geomorphology at Unawatuna bay beach during last four decades</b>  | <b>A. Wickramasooritya</b> , S. Dilini  |
| <u>10.30</u> | <b>Geomorphological numerical model of an uplifting costal area (the case study of Taranto, Italy)</b>   | <b>D. Capolongo</b> , E. Giachetta, G. Mastronuzzi  |

11.00 – 11.30 Coffe break

- |              |  |  |
|--------------|--|--|
| <u>11.30</u> | <b>Impact of Sea level Rise on Heritage Resources of the Delaware Estuary</b>  | <b>D. Nikitina</b> , H. Wholey, K. Knox  |
| <u>11.50</u> | <b>Morphometry and elevation of the Last Interglacial tidal notches in tectonically stable coasts of the Mediterranean Sea</b> | <b>Antonioli F.</b> , Ferranti L., Stocchi P., Deiana G., Lo Presti V., Furlani S., Marino C., Orru P., Scicchitano G., Trainito E., Anzidei M., Bonamini M., Sansò P., Mastronuzzi G. |

### TOPIC: ARCHAEOLOGICAL DATA AS MARKERS IN SEA LEVEL STUDIES

*Chairman: Anzidei M., Muru M.*

- |              |  |   |
|--------------|--|---|
| <u>12.10</u> | <b>Coastal seafaring and sea level change in ancient Lipari – Sicily from the Greek period to the Late Roman and Medieval time</b> | <b>Mazza A.</b>   |
| <u>12.30</u> | <b>5 ka record of sea level and climate change from the Harappan Dockyard ~ Lothal, Gujarat, Western India</b>                     | <b>A. Das</b> , S.P. Prizomwala, C. Vedpathak, A. Sodhi, N. Makwana |
| <u>12.50</u> | <b>Roman fishtank and sea level: new results and interpretations</b>   | K. Lambeck, <b>M. Anzidei</b> , F. Antonioli, A. Benini, F. Enei    |
| <u>13.10</u> | <b>Modelling the subsidence at Sybaris (Southern Italy): Geological and Geotechnical problems</b>                                  | F. Cotecchia, <b>R. Pagliarulo</b> , V. Lenti, M.R. Coop, R. Cafaro |

13.30 - 14.30 Lunch

**Coastal Tectonics and Relative Sea Level History of Cebu Island, Philippines Inferred from Emergent Marine Terraces and Coastal Notches**

**N.T. Ramos**, K.V. Maxwell, R.M.G. Lumongsod, R.B.C. Mendoza, C.B. Dimalanta

**Historical morphoevolution of the high rocky coast in the southern west sector of Procida island**

**M. Pennetta**, M. Assante Di Panzillo, G. Mattei, A. Rizzo, M. Sica, P. P.C. Aucelli

**Geomorphological coastal response to sea level rise during the Holocene: the knowledge of the past as key for the prediction of future inundation scenarios**

V. Amato, P.P.C. Aucelli, G. Di Paola, F. Matano, G. Pappone, **A. Rizzo**

**The so called givoni in the Taranto Gulf (Apulia region, Italy): key-features in understanding the link between terracing processes and sea-level fluctuations**

**V. De Santis**, M. Caldara

**Rapid sea level rise on a low gradient continental shelf: the case of Manfredonia Gulf (Apulia region, Italy)**

**V. De Santis**, M. Caldara, L. Pennetta

**The textural and mineralogical features of Riva degli Angeli beach sands (Salento Peninsula, Southern Italy)**

**Lapietra I.**, Lisco S., Moretti M.

**Examples of high-energy deposits related to storms and tsunami waves in north-western Atlantic Moroccan**

**N. Mhammdi**, F. Medina

**A microfaunal based sea-level indicator – transferable to ancient Ainos (W-Turkey)?**

**A. Pint**, M. Seeliger, S. Feuser, P. Frenzel, F. Pirson, S. Riedesel, H. Brückner

**Establishing a modern database of intertidal diatoms to reconstruct paleoearthquake land-level change**

**I. Hong**, B.P. Horton, S.E. Engelhart, A.D. Hawkes, R.J. O'Donnell III, J.S. Padgett, A.R. Nelson, T. Dura

**Relative Sea-Level Changes along the Manila Subduction Zone Recorded by Coral Microatolls in West Luzon Island, Philippines**

J. Weil-Accardo, A. Meltzner, N. Ramos, **K. Maxwell**, K. Lin, Y. Lu, X. Wang, P. Parham

**The role of the Sabellaria spinulosa reef in the coastal protection**

**Lisco S.**, Moretti M., Pierri C., Cardone F., Lazic T., Mele D., Corriero G.

**The sea level in the XVI century: geoarcheological analysis through the 3D reconstruction of the Aragonese Castle (Taranto) with LST methodologies**

**Curci G.**, Milella M., Pignatelli C., Locuratolo G., Barracane G., Piscitelli A.

**Estimation of the reservoir age in the Mar Piccolo basin in Taranto (Southern Italy) by AMS 14 C dating on Cerastoderma glaucum (Poiret, 1789)**

**Fago P.**, Quarta G., D'Elia M., Cipriano G., Scardino G., Valenzano E., Calcagnile L., Mastronuzzi G.

**Wetland stratigraphic evidence for variable megathrust earthquake rupture modes at the Cascadia subduction zone**

**A.R. Nelson**, R.C. Witter, S.E. Engelhart, A.D. Hawkes, B.P. Horton

**Holocene shore displacement and palaeogeography of Hiiumaa Island, NW Estonia**

**M. Muru**, A. Rosentau, T. Nirgi, H.L. Habicht, H. Tõnisson, S. Bjursater, A. Kriiska

15.50 – 18.20 Scientific session

**TOPIC: STRATIGRAPHIC RECORDS IN SEA LEVEL STUDY**

*Chairman: Moretti M., Dougherty A.*

15.50 **Imprints of the Last Glacial Cycle on the Coastal Tract of Eastern India**

**B.M.Faruque**

16.10 **The influence of sediment compaction on Late-Holocene relative sea-level changes along the North-American Atlantic Coast**

**M.J. Brain**, A.C. Kemp, S.E. Engelhart, N.J. Cox, B.P. Horton, N. Cahill

16.30 **Organic sediments from a submerged river valley in coastal zone of the Pärnu Bay, Baltic Sea record low relative sea levels in Holocene**

**T. Nirgi**, A. Rosentau, T. Jonuks, J. Risberg, T. Hang, H. Habicht, A. Jõelett, K. Kihno, A. Kriiska, S. Suuroja, H. Tõnisson

16.50 – 17.20 Coffee break

17.20 **An overwash sediment record from southern Narragansett Bay, Rhode Island, USA**

**J.S. Padgett**, S.E. Engelhart, B.T. Halavik, R.B. Stearns, G.A. Janigian, F.D. Russell, Z. Grissett, A. Bednarick, L. Griffiths, S. Aharon

17.40 **Utilizing GPR, OSL, and LiDAR (GOaL) to document sea level, storms, and coastal evolution recorded in Holocene and Pleistocene prograded barriers**

**A.J. Dougherty**, J.H. Choi, C.S.M. Turney, A. Dosseto

18.00 **Beach Rock as Sea-Level Indicator – Solving a common problem by sedimentological facies analysis**

**M. Falkenroth**, B. Schneider, G. Hoffmann

18.20 – End of the day

20.30 – Social event in Taranto

## **September 18<sup>th</sup>, Tuesday**

9.00-13.30 Scientific session

### TOPIC: EUSTASY, ISOSTASY AND TECTONICS

*Chairman: Rovere A., Shaw T.A.*

9.00 **Ex-situ quantification of sea-level index points and its use in the reassessment of the last interglacial sea-level database**

**T. Lorscheid**, A. Rovere

9.20 **Quaternary uplift, elevated marine shorelines and neotectonic activities in north-eastern Oman**

**B. Schneider**, G. Hoffmann, S. Mechernich, M. Falkenroth, A. Ermertz, T. Dunai, F. Preusser

9.40 **Postglacial Relative Sea-Level databases from near- to intermediate-field regions. A key tool to quantify the on-going isostatic signal along global coastlines**

**M. Vacchi**, S.E. Engelhart, E. Ashe, W.R. Peltier, K. Joyse, A. Rovere, K. Roy, R.E. Kopp, B.P. Horton

10.00 **Quantifying the timing and amplitude of Holocene relative sea level in south-central Chile using geomorphology and stratigraphy**

**D. Melnick**, E. Garrett, J. Jaramuñoz

10.20 **The Amplitude and Timing of Holocene Relative Sea-Level Changes from the Caribbean to South America**

**T.A. Shaw**, N.S. Khan, E. Ashe, K. Roy, B.P. Horton

10.40 **Insights into the glacial isostatic adjustment process in the Mediterranean basin from an analysis of globally distributed relative sea level records**

**K. Roy**, B.P. Horton, M. Vacchi, W.R. Peltier

11.00-11.30 Coffee break

### TOPIC: BIOLOGICAL CONSTRAINTS IN PAST SEA LEVEL RECONSTRUCTION

*Chairman: Engelhart S., Nikitina D.*

11.30 **Improving mangrove proxies for sea-level reconstruction**

**J. Sefton**, S. Woodroffe, E. McClymont

11.50 **Holocene Relative Sea Level Changes along the Northwest Cumbrian Coastline**

**D. S. M. B. Mohd Hanan**, K. Selby

- |              |  |  |
|--------------|--|--|
| <u>12.10</u> | <b>Reconstruction of spatial distribution and floral association of Holocene mangrove forests in Oman</b>  | <b>V. Decker</b> , S. Lindauer, J. Landgraf, G. Hoffmann                                   |
| <u>12.30</u> | <b>Comparison of sea level reconstructions with glacial isostatic adjustment model predictions for Southeast Asia</b>  | <b>P.R. Parham</b> , K. Roy, B.P. Horton, A. Meltzner, J. Majewski, T. Shaw                |
| <u>12.50</u> | <b>Vertical and lateral zonation of Foraminifera and Ostracoda in the German Wadden Sea – Establishment and first application of a transfer function for Holocene relative sea-level changes</b> | <b>J. Scheder</b> , F. Bungenstock, M. Engel, A. Pint, P. Frenzel, F. Schlütz, H. Brückner |
| <u>13.10</u> | <b>Seasonal distributions of salt marsh foraminifera from Narrow River, Rhode Island, USA</b>  | <b>B.T. Halavik</b> , C.M. Amelse, S.E. Engelhart, A.C. Kemp                               |

13.30 – 15.00 Lunch

15.00 – 17.40 Scientific session

**TOPIC: EXTREME MARINE EVENTS: TSUNAMI AND STORM SURGE**

*Chairman: Pilarczyk J., Hoffman G.*

- |              |   |  |
|--------------|---|--|
| <u>15.00</u> | <b>Coastal Environmental Change under Rising Sea-Levels and Respective Impacts on the Tsunami Hazard: A Theoretical Study</b>     | <b>R. Weiss</b>  |
| <u>15.20</u> | <b>Sedimentological evidence for large wave events in Oman</b>  | <b>G. Hoffmann</b> , C. Grützner, S. Schneiderwind, B. Schneider, F. Preusser, K. Reicherter |
| <u>15.40</u> | <b>Shell layer along the Southern Gulf of Kachchh coastline: Geological evidences of 1945 tsunami along the Indian coastline?</b> | <b>S.P. Prizomwala</b> , D. Gandhi, N. Makwana   |
| <u>16.00</u> | <b>Sea level and extreme waves in the Last Interglacial: open questions and research directions</b>                               | <b>A. Rovere</b> , J. Austermann, P. Stocchi, T. Lorscheid, M. Raymo                         |

16.20 – 17.00 Coffee break

- |              |  |   |
|--------------|--|---|
| <u>17.00</u> | <b>Geomorphological and Sedimentological Impacts of Hurricane Irma on Anegada, BVI</b> | <b>J. Pilarczyk</b> , M. Spiske, S. Mitchell, R. Halley                     |
| <u>17.20</u> | <b>Energy balance to transport massive boulders on rocky coast area</b>                | <b>G. Scardino</b> , M. Milella, De Giosa F., A. Piscitelli, G. Mastronuzzi |

17.40 – End of the day

**September 19<sup>th</sup>, Wednesday**

08.00-13.30 Field trip on Apulia-Calabria Ionian side (Stops: Taranto, Policoro)

13.30 – 14.15 Lunch bag

14.15 – 18.00 Field trip on Calabria Ionian side (Stops: Roseto Capo Spulico, Sibari)

18.00 Arrival in Sibari

20.30 Conference dinner and overnight in Sibari

**September 20<sup>th</sup>, Thursday**

8.00 – 13.30 Field trip on Calabria Thyrrhenian side (Stop: Briatico, Tropea)

13.30 – 14.15 Lunch bag

14.15 – 18.00 Field trip on Calabria Thyrrhenian side (Stop: Scilla)

18.00 – Arrival in Reggio Calabria

Dinner free and overnight in Reggio Calabria

### ***September 21<sup>th</sup>, Friday***

8.00 – 13.30 Field trip on Sicily Ionian Side (Stops: Giardini Naxos, Aci Trezza)

13.30 – 14.15 Lunch bag

14.15 – 18.00 Field trip on Sicily Ionian side (Stop: Catania Monte Po)

18.00 – Arrival in Siracusa

Dinner free and overnight in Siracusa

### ***September 22<sup>th</sup>, Saturday***

8.00 – 13.30 Field trip on Sicily Ionian Side (Stops: Megara Iblea, Priolo, Maddalena Peninsula, Marzamemi)

13.30 – 14.15 Lunch bag

14.15 – 18.00 Field trip on Sicily Ionian side (Stops: Ognina, Pantano Morghella)

18.00 – Arrival in Catania

Dinner free and overnight in Catania

### ***September 22<sup>th</sup>, Sunday***

8.00 Depart to Catania airport

Optional workshop

## ***PRESENTATION***

Scientific sessions will be held from Monday, September 17<sup>th</sup> - in the morning - till Tuesday, September 18<sup>th</sup> - in the evening -, at the Convento San Francesco, that host the University of Bari in Taranto.

Oral presentation will be limited to 15 minutes (and 5 minutes for discussion).

Poster presentation will be limited to 5 minutes.

Posters will be displayed for the entire duration of the meeting.

The lecture room will be equipped with a multimedia projector.



