**ICTP-CLIVAR Summer School on Oceanic Eastern Boundary Upwelling Systems**

**Programme**

15 – 19 July 2019, Trieste, Italy

* Monday, 15 July 2019
  + 08:30 - 17:30

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* + - 08:30 **Administrative and Financial formalities** *30'*

*REGISTRATION: Upon arrival, Visitors not staying in the ICTP Guest Houses, are kindly requested to complete registration formalities at the Adriatico Guesthouse as follows: Office 3 (Lower level) from 8.30 till 9.00.*

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* + - 09:00 **Introduction of Lecturers and Participants** *30'*

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* + - 09:30 **Role of international efforts on Climate change including EBUS** *15'*

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| Speaker: | Itahisa DENIZ GONZALEZ (IOC, UNESCO) |

* + - 09:45 **Eastern Boundary Upwelling Systems: importance and critical processes** *45'*

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| Speaker: | Annalisa BRACCO (Georgia Institute of Technology), Alban LAZAR (University Pierre and Marie Curie), Ryan RYKACZEWSKI (University South Carolina), Thomas TONIAZZO (Bjerknes Centre for Climate Research, Bergen), Riccardo FARNETI (ICTP) |

* + - 10:30 **Coffee break** *15'* ( Adriatico Guesthouse - Terrace )
    - 10:45 **Historical variability in EBUS and considerations about their future** *45'*

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| Speaker: | Ryan RYKACZEWSKI (University South Carolina) |

* + - 11:30 **Climatology of the atmospheric circulation** *45'*

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| Speaker: | Thomas TONIAZZO (Bjerknes Centre for Climate Research, Bergen) |

* + - 12:15 **Climatological ocean dynamics** *45'*

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| Speaker: | Martin SCHMIDT (Leibniz Institute for Baltic Sea Research) |

* + - 13:00 **Lunch / Swim** *3h0'*
    - 16:00 **The NetCDF format, data sources, and analysis tools** *1h30'*

*Introduction: Martin SCHMIDT, supervision: Lecturers*

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* + 17:30 - 19:30

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* + - 17:30 **Welcome Reception** *2h0'*

*All participants are cordially invited to attend the welcome reception.*

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* Tuesday, 16 July 2019
  + 09:00 - 19:00

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* + - 09:00 **Processes determining cloudiness distributions in EBUS regions: Part 1** *45'*

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| Speaker: | Paquita ZUIDEMA (University of Miami) |

* + - 09:45 **Processes determining cloudiness distributions in EBUS regions: Part 2** *45'*

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| Speaker: | Paquita ZUIDEMA (University of Miami) |

* + - 10:30 **Coffee break** *15'* (Adriatico Guesthouse - Terrace)
    - 10:45 **Atm. circulation and coastal topography** *45'*

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| Speaker: | Rene GARREAUD (University of Chile) |

* + - 11:30 **Drivers of coastal along-shore winds and their variability** *45'*

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| Speaker: | Thomas TONIAZZO (Bjerknes Centre for Climate Research, Bergen) |

* + - 12:15 **Cloud impacts across time scales** *45'*

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| Speaker: | Rene GARREAUD (University of Chile) |

* + - 13:00 **Lunch / Swim** *3h0'*
    - 16:00 **Data Analysis/Case Study** *1h30'*

*Introduction: Rene GARREAUD, Ryan RYKACZEWSKI, Thomas TONIAZZO, Paquita ZUIDEMA; supervision: Lecturers*

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* + - 17:30 **Coffee break** *15'* (Adriatico Guesthouse - Terrace)
    - 17:45 **Data Analysis/Case Study** *1h15'*

*supervision: Lecturers*

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* Wednesday, 17 July 2019
  + 09:00 - 19:00

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* + - 09:00 **Response of the ocean to wind fields** *45'*

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| Speaker: | Martin SCHMIDT (Leibniz Institute for Baltic Sea Research) |

* + - 09:45 **Transport and mixing at the ocean mesoscale** *45'*

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| Speaker: | Annalisa BRACCO (Georgia Institute of Technology) |

* + - 10:30 **Coffee break** *15'* (Adriatico Guesthouse - Terrace)
    - 10:45 **Processes controlling SSTs** *45'*

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| Speaker: | Alban LAZAR (University Pierre and Marie Curie) |

* + - 11:30 **Transport and mixing at the ocean submesoscales** *45'*

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| Speaker: | Annalisa BRACCO (Georgia Institute of Technology) |

* + - 12:15 **Coupled atmosphere-ocean feedbacks** *45'*

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| Speaker: | Art MILLER (Scripps Institute of Oceanography) |

* + - 13:00 **Lunch / Swim** *3h0'*
    - 16:00 **Participants' Poster Session** *1h30'*

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* + - 17:30 **Coffee break** *15'* (Adriatico Guesthouse - Terrace)
    - 17:45 **Participants' Poster Session** *1h15'*

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* Thursday, 18 July 2019
  + 09:00 - 19:00

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* + - 09:00 **Large-scale biogeochemistry and plankton ecology in EBUS** *45'*

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| Speaker: | Ryan RYKACZEWSKI (University South Carolina) |

* + - 09:45 **Role of (sub)Mesoscale for biogeochemistry and ecology in EBUS** *45'*

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| Speaker: | Ivy FRENGER (GEOMAR, Germany) |

* + - 10:30 **Coffee break** *15'* ( Adriatico Guesthouse - Terrace )
    - 10:45 **Biogeochemical Models in EBUS** *45'*

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| Speaker: | Ivy FRENGER (GEOMAR, Germany) |

* + - 11:30 **Upwelling impacts on the world’s largest fishery, the Peruvian anchoveta** *45'*

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| Speaker: | Fei CHAI (Second Institute of Oceanography, China) |

* + - 12:15 **Data assimilation; adjoint models** *45'*

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| Speaker: | Art MILLER (Scripps Institute of Oceanography) |

* + - 13:00 **Lunch / Swim** *3h0'*
    - 16:00 **The ICTP regional coupled model and the West Africa EBUS** *1h30'*

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| Speaker: | Riccardo FARNETI (ICTP) |

* + - 17:30 **Coffee break** *15'* ( Adriatico Guesthouse - Terrace )
    - 17:45 **Tutorial on Wind-SST-Chla interactions using Matlab** *1h15'*

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| Speaker: | Moussa DIAKHATÉ (Cheikh Anta Diop University, Senegal), Alban LAZAR (University Pierre and Marie Curie), Riccardo FARNETI (ICTP) |

* + 19:30 - 23:00 ICTP SOCIAL EVENT - "From Africa to Asia"
  + *There's no better place to celebrate summer than an "African- Asian" party at the ICTP featuring live percussionists and performers plus great dance music from all continents with DJ Patrick!*
  + *Join the party at the Leonardo Building Terrace on Thursday 18 July 2019 from 19:30 to 23:00 hrs!*
  + *A special buffet dinner will be served at the Leonardo Cafeteria starting at 19:30 and payable with two half-meal coupons or by cash - Euros 10.*
  + *Looking forward to seeing you with your friends and families!*

*Hosted Activities Office*

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| Location: | Leonardo Building Terrace |

* Friday, 19 July 2019
  + 09:00 - 19:00

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* + - 09:00 **Equatorial and coastal wave teleconnections in the EBUSs** *45'*

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| Speaker: | Alban LAZAR (University Pierre and Marie Curie) |

* + - 09:45 **Variability and equatorial teleconnections** *45'*

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| Speaker: | Rene GARREAUD (University of Chile), Art MILLER (Scripps Institute of Oceanography) |

* + - 10:30 **Coffee break** *15'* ( Adriatico Guesthouse - Terrace )
    - 10:45 **Downscaling of climate change impacts on EBUS biogeochemistry** *45'*

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| Speaker: | Fei CHAI (Second Institute of Oceanography, China) |

* + - 11:30 **EBUS biases and uncertainties in global and regional models** *45'*

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| Speaker: | Thomas TONIAZZO (Bjerknes Centre for Climate Research, Bergen), Riccardo FARNETI (ICTP) |

* + - 12:15 **Alongshore winds in IPCC model projections** *45'*

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| Speaker: | Ryan RYKACZEWSKI (University South Carolina) |

* + - 13:00 **Lunch / Swim** *3h0'*
    - 16:00 **Debate on climate change in EBUS: selection of hypotheses from the literature** *1h30'*

*Students*

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* + - 17:30 **Coffee break** *15'* (Adriatico Guesthouse - Terrace)
    - 17:45 **Debate on climate change in EBUS: discussion on hypotheses** *1h15'*

*Students*