



## 6th workshop on “Parameterization of Lakes in Numerical Weather Prediction and Climate Modelling”

22-24 October 2019-Toulouse, France.

### PROGRAMME

#### Tuesday 22 October 2019

##### Session: Modelling

Chair: **Dmitrii Mironov**

- 09:15-09:30    Opening  
**Patrick Le Moigne**
- 09:30-09:50    Application of FLake to stratification modeling: problems and solutions  
**Georgiy Kirillin**, IGB Berlin
- 09:50-10:10    Surface Stress and Mixing in Small, Sheltered Boreal Lakes  
**Murray MacKay**, Environment and Climate Change Canada
- 10:10-10:30    Two-way Atmosphere-Lake-Ice Coupled Regional Climate Simulation over the Great Lakes Region  
**Philip Chu**, NOAA Great Lakes Environmental Research Laboratory
- 10:30-11:00**    *Coffee Break*
- 11:00-11:20    Improvement of lake water dynamics in land surface model  
**Thibault Guinaldo**, CNRM
- 11:20-11:40    Improve Lake Effect Snow Predictions Through a loosely-Coupled NWP-Lake-Ice Modeling Approach  
**Philip Chu**, NOAA Great Lakes Environmental Research Laboratory
- 11:40-12:00    Global lake database: towards increased resolution  
**Ekaterina Kurzeneva**, Finland Meteorological Institute
- 12:00-12:20    Sensitivity analysis of FLake lake model for global land surface modeling  
**Anthony Bernus**, LSCE
- 12:30-14:00**    *Lunch*

##### Session: Climate impact

Chair: **Homa Kheyrollah Pour**

- 14:00-14:20    Easy lakes? Rationale and latest news from the ISIMIP lake sector  
**Wim Thiery**, Vrije Universiteit Brussel
- 14:20-14:40    Ongoing developments of land surface hydrology in the INM RAS-MSU terrestrial model  
**Victor Stepanenko**, Lomonosov Moscow State University
- 14:40-15:00    Local factors affecting climate related warming of lakes  
**Carl Love Mikael Raaman Vinnaa**, Eawag, Switzerland
- 15:00-15:20    Climate change impact on lake surface energy budget in the 20th century  
**Delphine Leroux**, CNRM
- 15:50-16:10    Assessment of the climate impact of a large artificial reservoir using a mesoscale simulations over a Typical Meteorological Year  
**Rui Salgado**, University of Evora, Earth Sciences Institute

- 16:10-16:30 Effect of climate warming on the mixed layer depth in lakes  
**Tom Shatwell**, Helmholtz Environmental Research Centre - UFZ
- 16:30-16:50 Effect of future climate change and selective withdrawal on the thermal structure of Germany's largest drinking water reservoir  
**Chenxi Mi**, UFZ
- 17:00-18:30 *Discussion*
- 18:30-20:00** *Poster session + Welcome reception*
- Applicability of 20th century surface air temperature reanalysis to understanding long-term thermal changes in lakes worldwide  
**Sebastiano Piccolroaz**, University of Bolzano
- A residence time of lakes located in the Larsemann Hills oasis, East Antarctica  
**Elena Shevnina**, Finnish Meteorological Institute
- A first approach to the 3D Circulation of Lake Llanquihue (Los Lagos Region, Chile) using the Coastal and Regional Ocean COmmunity model (CROCO)  
**Ignacio Garcia**, University of Concepción
- Teaching Lake modeling: A Matlab Simulink conceptual model based in FLAKE.  
**Ignacio Garcia**, University of Concepción
- Modeling of water balance of Lake Poopó of the TPDS basin (Titicaca, Poopó, Desaguadero, alares): a research project.  
**Ignacio Garcia**, University of Concepción
- Modelling 40 years of water temperature of a small shallow lake. Is there any trend in stratification and mixing regime?  
**Francesco Piccioni**, Laboratoire Eau Environnement et systèmes urbains (LEESU)

## Wednesday 23 October 2019

### Session: Model validation and applications

Chair: Ekaterina Kourzeneva

- 08:00-09:00 *Discussion (COST, ITN, special issue, FLake for salt waters)*
- 09:00-09:20 Verification of lake surface water temperature and ice on/off dates  
**Margarita Choulga**, ECMWF
- 09:20-09:40 Multi-scale validation of a 3D one-way coupled atmospheric and lake hydrodynamic model  
**Marina Amadori**, University of Trento
- 09:40-10:00 Snow and ice in wintertime FLake within the FMI operational HIRLAM  
**Laura Rontu**, FMI
- 10:00-10:30** *Coffee Break*
- 10:30-10:50 Some features of wintertime surface energy balance in a small dimictic lake in Finland: implications to carbon cycle related processes  
**Ivan Mammarella**, University of Helsinki
- 10:50-11:10 Snow-ice interface detection from high resolution vertical temperature profiles measured by unmanned ice mass balance buoys in an Arctic lake  
**Yubing Cheng**, The Institute of Atmospheric, Chinese Academy of Sciences
- 11:10-12:00 *Discussion*
- 12:00-13:00** *Lunch*
- 14:00-18:00 *Excursion (14:00: visit, 16:00: boat)*
- 19:30** *Conference Dinner*

# Thursday 24 October 2019

## Session: Reservoirs

Chair: Rui Salgado

- 09:00-09:20 LAKE2.0 and FLake simulation results of the Alqueva artificial reservoir dynamics.  
**Maxim Iakunin**, University of Évora
- 09:20-09:40 Effects of reservoir operations on aquatic habitat in a montane reservoir  
**Clelia Luisa Marti**, University of Vermont
- 09:40-10:00 Implementing reservoirs in CTSM: accounting for reservoir construction in the 20th century.  
**Inne Vanderkelen**, Vrije Universiteit Brussel
- 10:00-10:20 Effect of Autumn reservoir overturn on turbulent fluxes over Alqueva  
**Miguel Potes**, Institute of Earth Sciences. University of Evora
- 10:20-10:50** *Coffee Break*
- 10:50-11:10 Parameterization of empirical models for chl-a retrieval in reservoirs with two different sources of data applying different atmospheric corrections. (I) Calibration.  
**Carmen Cillero Castro**, 3edata - USC

## Session: Data Assimilation

Chair: Claudia Giardino

- 11:10-11:30 Cycled data assimilation for lakes via atmosphere-surface exchange to initialize lake conditions in US weather models  
**Stan Benjamin**, NOAA Earth System Research Lab
- 11:30-11:50 Meteolakes.ch, an operational 3D hydrodynamic platform for lakes  
**Damien Bouffard**, Eawag Switzerland
- 12:00-13:30** *Lunch*

## Session: Remote Sensing

Chair: Claudia Giardino

- 13:30-13:50 Delivering the Lake Essential Climate Variables - an update from ESA lakes CCI  
**Stefan Simis**, Plymouth Marine Laboratory
- 13:50-14:10 A global observatory of inland waters responses to environmental change (GloboLakes)  
**Evangelos Spyros / Andrew Tyler**, University of Stirling
- 14:10-14:30 Evolution of satellite-derived lake ice products for climate studies  
**Claude Duguay**, University of Waterloo and H2O Geomatics
- 14:30-14:50 Effects of Winter Conditions on Water Quality of Lakes-Using Remote Sensing and Machine Learning  
**Homa Kheyrollah Pour**, Wilfrid Laurier University
- 14:50-15:20** *Coffee break*
- 15:20-15:40 Assessment of the influence of climate change on the trophic status of Italian subalpine lakes using time series of chlorophyll-a derived from satellite products  
**Mariano Bresciani**, CNR-IREA
- 15:40-16:00 Bio-optical modeling of lakes in cascade in Germany – preliminary results  
**Igor Ogashawara**, Leibniz-Institute for Freshwater Ecology and Inland Fisheries
- 16:00-17:00 *Discussion*
- 17:00-17:30 *Closing remarks*