



Program of the 4th OGGM workshop

17 – 21 June 2019, Grenoble, France

General program:

Monday 17th, 15 pm - Wednesday 19th, 17 pm June (at Mésanges hôtel, Saint-Martin d'Uriage - <http://www.hotel-les-mesanges.com/>): workshop dedicated to present the state of OGGM, the recent developments and its place in the international context of glacier modelling, present recent results of studies using OGGM as ongoing / future projects, and to discuss and brainstorm about future developments and visions for OGGM.

Thursday 20th, 8 am - Friday 21st June, 16 pm (at IGE lab, Saint-Martin d'Hères - <http://www.ige-grenoble.fr/>): hands-on workshop dedicated to tutorials for beginners, advanced topics for more experienced users, and programming to develop OGGM and its partner OGGM educational.



Program details:

Monday 17th June (at hôtel Mésanges, Saint-Martin d'Uriage)

- 12:00 - 13:00: arrival of the first part of the participants
- 13:00 - 14:00: lunch time
- 14:00 - 15:00: arrival of the rest of the participants
- 15:00: official start of the workshop !
- 15:00 - 16:30: **SESSION INTRODUCTION / STATE-OF-ART**
 - **OGGM team** (represented by **Nicolas Champollion**): introduction & objectives of the workshop (10 + 5 min) - **Durations are approximate & flexible !**
 - **Fabien Maussion**: what is OGGM ? Introduction of the core ideas of the model, what it intends to be and NOT to be, current status (30 + 15 min)
 - **Fabien Gillet-Chaulet**: description of Elmer/Ice model, synergy and complementarity with OGGM (20 + 10 min)
- 16:30 - 17:00: coffee break
- 17:00 - 18:30: **SESSION THE FUTURE OF OGGM**
 - **Ben Marzeion**: new projects in Bremen, ongoing funding efforts (15 + 5 min)
 - **Nicolas Champollion**: long-term vision of OGGM (15 + 5 min)
 - **Fabien Maussion**: OGGM on the cloud - why is Fabien always talking about clouds all the time ? (15 + 5 min)
 - **Zora Schirmeister & Patrick Schmitt**: OGGM-Edu, an educational platform about glaciers (15 + 5 min)
- 19:30: dinner time

Tuesday 18th June (at hôtel Mésanges, Saint-Martin d'Uriage)

- 7:00 - 8:30: breakfast time
- 8:30 - 10:30: **SESSION GLACIER IN THE PAST**
 - **Julia Eis**: Initialization in 1850: from synthetic experiments to real-world applications (15 + 15 min)
 - **Madlene Pfeiffer**: reconstruction of climate and glacier evolution on a centennial time scale” (15 + 15 min)
 - **David Parkes**: modelling length changes over the last millennium across most RGI regions (15 + 15 min)
 - **Matthias Dusch**: can we model past glacier length changes ? (15 + 15 min)
- 10:30 - 11:00: coffee break
- 11:00 - 12:30: **SESSION GLACIER SURFACE MASS BALANCE**
 - **Anouk Vlug**: the influence of natural climate variability on Canadian Arctic glacier volume during the last millennium (15 + 15 min)
 - **Anton Butenko**: shortwave radiation parameterization in OGGM surface mass balance (15 + 15 min).
 - **Jordi Bolibar**: Glacier surface mass balance modelling using Deep Learning (15 + 15 min)
- 12:30 - 14:00: lunch time
- 14:00 - 15:30: **SESSION GLACIER ICE THICKNESS**
 - **Fabien Maussion**: factors of uncertainty in the global ice thickness estimates (15 + 15 min)
 - **Beatriz Recinos** (with **Marco Möller**): calving in Greenland (15 + 15 min)
 - **Fabien Maussion** (representing **Philipp Gregor**): inversion of glacier bed from surface observations by cost minimization, introducing the open source model COMBINE (15 + 15 min)
- 15:30 - 16:00: coffee break
- 16:00 - 18:00: **SESSION OPEN DISCUSSION**
 - **Open discussion about OGGM & the workshop** (led by **Nicolas Champollion**): what was interesting ? what was not ? Next OGGM workshop, date and location ? OGGM in the coming international conferences ? OGGM main code decision / maintenance / fundings ? Link with other glacier / ice-sheet models ? What has been scientifically done ? What is projected to be done ? What is not projected to be done BUT could be done with OGGM ?
- 19:30: dinner time

Wednesday 19th June (at hôtel Mésanges, Saint-Martin d'Uriage)

- 7:00 - 8:15: breakfast time
- 08:15 - 10:00: **SESSION DIVERSITY OF OGGM**
 - **Fabien Maussion** (representing **Moritz Oberrauch**): implementing alternative evolution models in OGGM - let's go back to 2012 (10 + 10 min)
 - **Samia Melki**: modeling rock glaciers, example of Laurichard glacier (20 + 10 min)
 - **Jenna Sutherland**: control of proglacial lakes on outlet glaciers during the Last Glacial Maximum in New Zealand (15 + 15 min)
 - **Nicolas Champollion**: projections of global glacier change during the 21st century (10 + 10 min)
- 10:00 - 10:30: coffee break
- 10:30 - 12:30: **SESSION SCIENTIFIC QUESTIONS**
 - Using ice velocity / GlaThiDa dataset for the ice thickness inversion & for the calving parametrization & availability of global dataset of ice velocity ?
 - Can we overtake data limitations with OGGM (DEMs, glacier outlines, mass balance, ice thickness, bathymetry, climate forcing ...) ?
 - How to deal with uncertainties in OGGM ? Can we develop tools to help people doing their uncertainty estimations ?
 - Alternative surface mass balance modules for OGGM: allowing the user to choose from different ways of computing glacier SMB ?
 - Using OGGM framework to simulate rock glacier, debris-covered glacier ... ? (**Nico**)
 - Can we reconstruct glaciers in the past ?
- 12:30 - 14:00: lunch time
- 14:00 - 16:00: **SESSION STRUCTURAL QUESTIONS**
 - Communication: blog, github, documentation, mailing lists, slack, open discourse ?
 - Maintenance: how to deal with the many small"-ish" issues that could need some love, but still require like several days / weeks of work ?
 - Opening: long-term link between ice sheet and glacier modelling communities ? (**Nico**)
 - Contribution: who is contributing to the OGGM model (Innsbruck, Brême, Grenoble, Hannover, Fairbanks ?, Louvain ? ...) (**Nico**)
- 16:00 - 17:00: coffee break & discussion time
- 17:00: end of the sessioning part of the workshop !
- 20:00: Grenoble cable car to “La Bastille” (<https://bastille-grenoble.fr/>) and diner at the restaurant there at 20:30 pm (<https://www.o2-restaurant.fr/>). Bus from “Saint-Martin d'Uriage - Le Vacher” at 17:42 (bus number 6051) to “Saint-Martin d'Hères - Bibliothèque Universitaire” at 18:09 where there is the tramway (<https://www.tag.fr/>).

**Thursday 20th June (at Institut des Géosciences de l'Environnement,
Saint-Martin d'Hères, Lliboutry room)**

- 08:30: start of the hands-on part of the workshop !
 - 08:30 - 10:00: **SESSION TUTORIALS FOR BEGINNERS (PART GETTING STARTED)**
 - OGGM installation (15 min - **by Fabien**)
 - OGGM workflow (30 min - **by Fabien**)
 - OGGM run scripts (45 min - **by Fabien**)
 - 10:00 - 10:30: coffee break
 - 10:30 - 12:00: **SESSION TUTORIALS FOR BEGINNERS (PART REMOTE RUNS)**
 - OGGM on GitHub, new user example (30 min)
 - OGGM / OGGM-edu on the cloud, notebooks example (30 min)
 - OGGM on the cluster, script example (30 min - **by Julia and Bea**)
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- 8:00 - 12:00: programming halfday for experienced users.
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- 12:00 - 13:30: lunch time (at No Name brasserie, next to IGE lab)
 - 13:30 - 15:00: **SESSION ADVANCED TOPICS FOR MORE EXPERIENCED USERS (PART A)**
 - Contributing / Developing OGGM (30 min - **by Fabien**)
 - OGGM visualisation overview and interactive plots with Bokeh / Pyviz (30 min)
 - 15:00 - 15:30: coffee break
 - 15:30 - 17:00: **SESSION ADVANCED TOPICS FOR MORE EXPERIENCED USERS (PART B)**
 - What is a docker container and how can I use them? (30 min)
 - OGGM outputs and storage (30 min)
 - 19:00: dinner time (at Pizza Campus, <http://pizza-campus.com/>)

**Friday 21st June (at Institut des Géosciences de l'Environnement, Saint-Martin
d'Hères, Lliboutry room)**

- 08:30 - 10:00: **SESSION PROGRAMMING (PART A)**
 - Resolving issues of OGGM, OGGM educational
 - Improving OGGM documentation, OGGM website
 - Developing new modules / functions into OGGM
- 10:00 - 10:30: coffee break
- 10:30 - 12:00: **SESSION PROGRAMMING (PART B)**
 - Resolving issues of OGGM, OGGM educational
 - Improving OGGM documentation, OGGM website
 - Developing new modules / functions into OGGM
- 12:00 - 13:30: lunch time (at No Name brasserie, next to IGE lab)
- 13:30 - 15:00: **SESSION PROGRAMMING (PART C)**
 - Resolving issues of OGGM, OGGM educational
 - Improving OGGM documentation, OGGM website
 - Developing new modules / functions into OGGM
- 15:00 - 15:30: coffee break
- 16:00: end of the workshop hands-on part and official end of the workshop !

Ressources:

- ★ <https://oggm.org/> (OGGM website)
- ★ <https://docs.oggm.org/en/latest/> (OGGM documentation)
- ★ <http://edu.oggm.org/en/latest/> (OGGM educational)
- ★ <https://github.com/OGGM/oggm> (OGGM github code)
- ★ <https://www.geosci-model-dev.net/12/909/2019/gmd-12-909-2019.pdf> (OGGM based paper)
- ★ <https://oggm.org/2019/02/08/4th-workshop-announcement/> (4th OGGM workshop announcement)
- ★ https://hackmd.io/6O_xCyDKSf-VDA36aPU5dO?both (4th OGGM preparation document)
- ★ <https://docs.google.com/document/d/1-5AhdMPa1D3Vnq7lCbDs2u2XjwUygre9-YDoYkuE3k/edit> (4th OGGM program)