

5th Elmer/Ice users meeting 9 April 2019 – Vienna (EGU 2019)

Program

- ✓ What's new since last users meeting (2017) ? (O. Gagliardini)
- ✓ Thomas Zwinger: permafrost model
- ✓ Thomas Zwinger: visco-elastic Solver (application to GIA)
- ✓ Thomas Zwinger: vectorized Stokes Solver
- ✓ Nico Jourdain / Lionel Favier – coupling Elmer/Ice - NEMO
- ✓ Thomas Zwinger / Rupert Gladstone – ROMS – FISOC - Elmer/Ice
- ✓ Clemens Schannwell – ongoing work
- ✓ Joe Todd – Reproducibility in Elmer/Ice (MUMPS)
- ✓ Fabien Gillet-Chaulet – Stabilization of the free surface solver
- ✓ Discussion about future developments

What's new since the last users meeting (2017)?

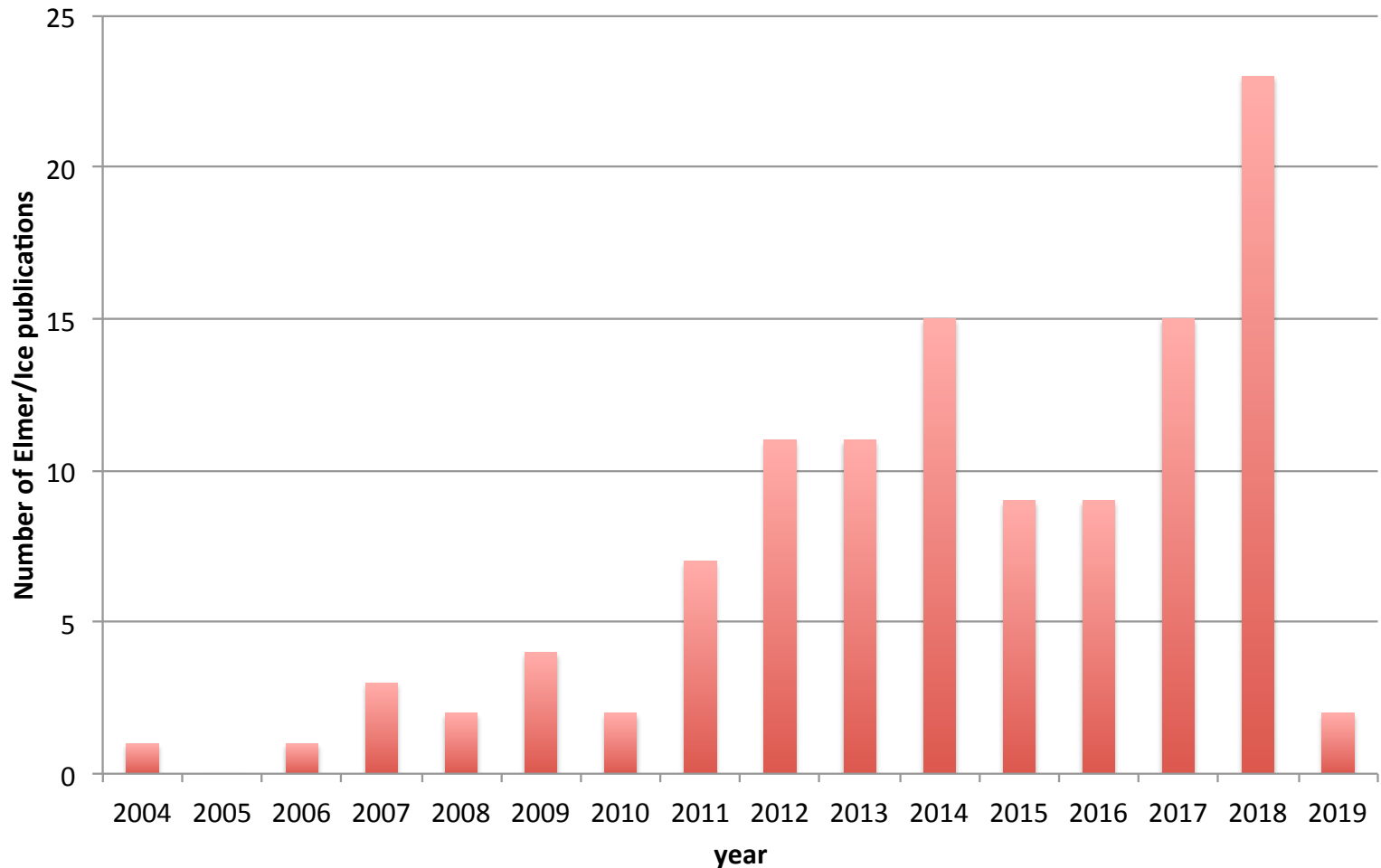
Elmer/Ice courses

- ✓ 3-day Elmer/Ice advanced users workshop, 29th-31st Oct. 2018, CSC, Espoo, Finland.
- ✓ 2-day beginner Elmer/Ice course, 22nd & 23rd Oct. 2018, University of Lapland, Rovaniemi, Finland.
- ✓ 3-day advanced Elmer/Ice workshop, 22nd, 23rd and 24th Nov. 2017, IGE, Grenoble, France.
- ✓ 2-day beginner Elmer/Ice course, 23rd and 24th Oct. 2017, University of Stockholm, Sweden.

**Planned courses beginner & advanced workshop:
Iceland this October?**

Elmer/Ice applications

115 publications using Elmer/Ice since 2004 (+36)



What is new in Elmer/Ice? (git commit)

Elmer Release Notes for **version 8.3**

Previous release: 8.2 Period covered: 12 March 2016 - 18 May 2017

Number of commits: ~620

- 3D calving code – April 2017
- Emergence solver – April 2017

Elmer Release Notes for **version 8.4**

Previous release: 8.3 Period covered: 18 May 2017 - 18 Dec 2018

Number of commits: ~750 (excluding merges)

Elmer/Ice : https://raw.githubusercontent.com/ElmerCSC/elmerfem/release/elmerice/ReleaseNotes/release_elmerice_8.4.txt

Elmer/Ice release version 8.4

https://raw.githubusercontent.com/ElmerCSC/elmerfem/release/elmerice/ReleaseNotes/release_elmerice_8.4.txt

- Added F90 functions for ice heat capacity and conductivity as well as for pressure melting point added via USF_Iceproperties.F90
- Introduced fixes to grounding line code.
- Introduced new scalar product definition for Beta Adjoint optimisation.
- Elmer/Ice-sheet: Introduced standard configuration files to run ice-sheet wide simulations with Elmer
- Added GlaDS solvers (basal hydrology) and 4 Tests for these solvers.
- New SSA-FS coupler implemented, including testcase.
- Flootation solver
- New entropy-based temperature solver EnthalpySolver.F90

since release 8.4

- moved parallel and work for periodic boundary conditions for Solvers ForceToStress and GetHydrostaticLoads (interest for the cavity problem)

Elmer/Ice at EGU 2019

MONDAY

Olivier Gagliardini , Accounting for transient effects in water pressure in friction law - Mon, 08 Apr, 09:30–09:45 Room L6

Joe Todd, Doug Benn, Tom Cowton, Jan Åstrom, and Thomas Zwinger, New insights into glacier calving and environmental sensitivity from a combined continuum & discrete 3D modelling approach - Mon, 08 Apr, 11:45–12:00 Room L6

Thomas Zwinger, Juha Hartikainen, and Denis Cohen, A high-resolution coupled permafrost - ice sheet model - Mon, 08 Apr, 14:15–14:30 Room N2

Daniel Farinotti, Matthias Huss, Johannes J. Fürst, Johannes Landmann, Horst Machguth, Fabien Maussion, and Ankur Pandit, A consensus estimate for the ice thickness distribution of all glaciers on Earth - Mon, 08 Apr, 17:15–17:30 Room 1.85

TUESDAY

Tom Cowton, Joe Todd, and Doug Benn, Sensitivity of calving rates to plume melting at an idealised tidewater glacier - Tue, 09 Apr, 14:00–15:45 Hall X4

Fabien Gillet-Chaulet, Transient calibration of a marine ice sheet model using an ensemble Kalman filter - Tue, 09 Apr, 16:15–18:00 Hall X4

Johannes J. Fürst, Mapping glacier ice thickness in Patagonia - Tue, 09 Apr, 16:15–18:00 Hall X4

Elmer/Ice at EGU 2019

WEDNESDAY

Samuel Cook, Poul Christoffersen, Joe Todd, Donald Slater, and Nolwenn Chauché, Integrated investigation of subglacial hydrology and convective plume melting using a 3D full-Stokes model of Store Glacier, West Greenland - Wed, 10 Apr, 11:45–12:00 Room N2

Doug Benn, Jan Åström, Thomas Zwinger, Joe Todd, and Anna Crawford, Marine Ice-cliff instability: How Does it Work, and What Controls Ice Retreat Rates? - Wed, 10 Apr, 15:00–15:15 Room N2

Eef van Dongen, Andrea Walter, Guillaume Jouvét, Martin Funk, Joe Todd, Jan Åström, and Thomas Zwinger, Monitoring and modeling a recurrent major calving event at Bowdoin Glacier, Greenland - Wed, 10 Apr, 11:15–11:30 Room N2

missing material?