

## Workshop “Recrystallization and Grain Growth”

26 – 31 January 2020

Les Houches School of Physics, France

(<https://www.houches-school-physics.com/>)

### PROGRAM (01/22/2019)

SUNDAY	<b>Arrival at the School of Physics at Les Houches and installation in the rooms.</b> All instructions will be in a mailbox with your name in the hall of the main building. <b>IMPORTANT:</b> No arrival before 3pm! If you arrive before, please make a halt at the village, since the School will be closed and it is located 2km uphill from the village.
6 pm	Welcoming drinks

MONDAY 27	
8:45 – 9:00	Introduction
9:00 – 10:00	<b>Invited Talk – Marc Legros</b> Shear-migration coupling of grain boundaries in metals: an alternative plastic deformation process
10:00 – 10:30	High-resolution 3D synchrotron X-rays methods for full field in-situ recrystallization studies <u>Yubin Zhang</u>
10:30 – 10:50	Coffee break
10:50 – 11:20	Dislocation-driven static recrystallization in AZ31B magnesium alloy imaged by quasi-in-situ EBSD experiments <u>Marco Antonio López Sánchez</u> , Andrea Tommasi, Fabrice Barou, Romain Quey
11:20 – 11:50	Deformation of polycrystalline forsterite at 900-1200 °C and grain boundary activity <u>Sylvie Demouchy</u> , Julien Gasc, Fabrice Barou, Sanae Koizumi, Patrick Cordier
11:50 – 12:20	On-Axis Transmission Kikuchi Diffraction on the SEM. Performances and Applications Emmanuel Bouzy, <u>Etienne Brodu</u> , Clement Ernould, Benoit Beausir, Jean-Jacques Fundenberger, Vincent Taupin
12:30 – 2:00	Lunch
2:00 – 5:00	Free time
5:00 – 7:00	Practical workshops
7:00	Welcome drink - Diner

TUESDAY 28	
8:30 – 9:30	<b>Invited Talk – Marc Bernacki</b> Full field modeling of recrystallization in polycrystalline nickel base superalloys
9:30 – 10:00	Optimized manufacture of nuclear fuel cladding tubes by numerical modeling of processes and microstructure evolution analysis <u>Alexis Gaillac</u> , Pierre Barberis, Isabelle Crassous, Florian Lyonnet
10:00 – 10:30	Industrial needs regarding solving recrystallization issues <u>Antoine Courtoux</u>
10:30 – 10:50	Coffee Break
10:50 – 11:20	Texture formation during hot rolling of ferritic stainless steel <u>Jean-Denis Mithieux</u> , Arthur Després, Chad Sinclair, Francis Chassagne
11:20 – 11:50	A new lagrangian strategy for the simulation of boundary migration applied to microstructure evolutions Sebastian Florez, <u>Marc Bernacki</u>
11:50 – 12:20	A new level set-finite element formulation for anisotropic grain boundary migration Julien Fausty, Nathalie Bozzolo, <u>Marc Bernacki</u>
12:30 – 2:00	Lunch
2:00 – 5:00	Free time
5:00 – 7:30	Practical workshops
7:30 – 9:00	Diner

WEDNESDAY 29	Session organized by young researchers. Program will be modified
8:30 – 9:30	<b>Invited Talk – Håkan Halberg</b> “Modeling and simulation of recrystallization and grain growth”
9:30 – 9:50	Material parameters identification in the context of full field modelling of grain growth and recrystallization, <u>Baptiste Flipon</u> , Nathalie Bozzolo, Marc Bernacki
9:50 – 10:20	Coffee Break
10:20 – 10:40	A semi-topological approach for mean-field models of dynamic and metadynamic recrystallization (as an introduction to some practical workshops) <u>David Piot</u>
10:40 – 11:00	Grain growth based on Orientated Tessellation Updating Method <u>Daniel Weisz-Patrault</u> , Sofia Sakout, Alain Ehlacher
11:00 – 11:40	<u>Co-working reflexion and preparation of questions</u>
11:40 – 12:20	<u>Questions and discussions</u>
12:30 – 2:00	Lunch
2:00 – 5:00	Free time
5:00 – 7:30	Practical workshops
7:30 – 9:00	Diner
9:00 – 10:30	Collective work “After GDR Recrystallization, what’s next for our community?”

THURSDAY 30	
8:30 – 9:30	<b>Invited Talk – Cecilia Poletti</b> “Dynamic recovery and recrystallization at large strains in aluminium and titanium alloys: experiments and models”
9:30 – 10:00	Microstructure evolution during multiaxial processing of Ti-6Al-4V <u>Margaux Saint Jalme</u> , Julien Favre, Sylvain Dancette, Damien Fabregue, Christophe Schuman, Jean-Sébastien Lecomte, Etienne Archaud, Christian Dumont, Christophe Desrayaud
10:00 – 10:30	Texture evolution during dynamic recrystallization in olivine-rich rocks <u>Marco Antonio López Sánchez</u> , Andrea Tommasi, Walid Ben Ismail, Fabrice Barou
10:30 – 11:00	Coffee Break
11:00 – 11:00	Xenolith Constraints on Rheology of Heterogeneous Deep Crust Beneath the Eastern Mojave Desert, California <u>Lonnie Hufford</u> , Emily Chin, Sarah Perry, Elena Miranda, John Hanchar
11:30 – 12:00	Deformation of oceanic crust at slow-spreading ridges: microstructures in gabbros from the SouthWest Indian ridge (IODP Hole U1473A) <u>Maël Allard</u> , Benoît Ildefonse, Emilien Oliot
12:30 – 2:00	Lunch
2:00 – 5:00	Free time
5:00 – 7:30	Collective work organised by young researchers
7:30 – 9:00	Diner

FRIDAY 31	
8:30 – 9:30	<b>Invited Talk – Benoit Appolaire</b> “Phase-field models for grain growth and recrystallization”
9:30 – 10:00	Grain growth in polycrystals - 3D experimental observation and phase field modeling Jin Zhang, <u>Wolfgang Ludwig</u> , Y. Zhang, P. Vorhees, H. Poulsen
10:00 – 10:30	Misorientation dependence of the grain boundary migration rate: role of elastic anisotropy <u>Thiebaud Richeton</u> , Xiaolei Chen, Stephane Berbenni
10:30 – 11:00	Coffee Break
11:00 – 11:30	Using second-order bounds to parametrize the anisotropic elastic tensor of snow, firn and ice microstructures <u>Kavitha Sundu</u> , Henning Löwe
11:30 – 12:00	Accounting for elastic anisotropy in crystal plasticity within the context of olivine dynamic recrystallization using a level-set framework <u>Jean Furstoss</u> , Carole Petit, Daniel Pino Muñoz, Clement Ganino, Marc Bernacki
12:00 – 2:00	Lunch & Departure

#### Free time:

- Ski in the Les Houches resort (2km downhill, informations at the housing centre)
- Rooms are available for discussions and exchanges

#### Practical workshops:

Time to discover specific tools for modeling and data treatment, in small groups.

**Please come with your laptop if possible.**

- Full-field modeling with DIGIMU, Pascal de Micheli (TSV) and Baptiste Flipon (CEMEF)
- Mean-field modeling, Baptiste Flipon (CEMEF)
- High-resolution EBSD, Claire Maurice (EMSE)
- X-ray peak profile analysis using the method of moments. Evaluation of the dislocation density and coherent crystal size, Andràs Borbely (EMSE)
- EBSD data treatment with MTEX, Marco Lopez-Sanchez, Mael Allard, and Andréa Tommasi (Géosciences Montpellier), Daniel VARADARADJOU (Lab. Roberval)