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Summer school on metamorphism Uni Pavia 2020

## “The metamorphosis of metamorphism”

Pavia 6<sup>th</sup> 11<sup>th</sup> July 2020

The school will open with a brief overview of the theoretical background required for the understanding of the entire school. After the introduction the school will cover 5 high impact topics: mechanical equilibrium barometry; stress driven reactions; fluid rock interactions; pseudotachylytes.

23 leading scientists in their fields will give lectures and hands on practical courses as in the detailed preliminary program here below

All participants will have the chance to test some of what they have learned with an exciting field trip to the Lanzo Massif



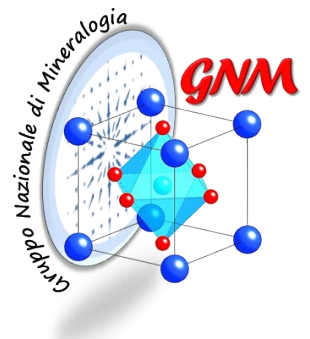
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## HISTORY OF SUBDUCTION AND NUMERICAL MODELS

Mon 6<sup>th</sup>

8:30 AM	8:45 AM	<i>Registration</i>	
8:45 AM	9:00 AM	<i>Welcome and opening</i>	
9:00 AM	10:00 AM	<b>Christian Chopin</b>	History of subduction of continental crust
10:00 AM	11:00 AM	<b>Davide Bigoni</b>	Shear bands, folding and faulting of geological media
11:00 AM	11:30 AM	<i>Coffee break</i>	
11:30 AM	12:30 PM	<b>Giancarlo Sangalli</b>	An introduction to finite element simulations for solid mechanics problems
12:30 PM	1:30 PM	<i>Lunch break</i>	
1:30 PM	2:30 PM	<b>Alessandro Reali</b>	An introduction to finite element simulations for solid mechanics problems
2:30 PM	3:30 PM		Practical finite element simulations
3:30 PM	4:00 PM	<i>Coffee break</i>	
4:00 PM	5:00 PM		Practical finite element simulations
5:00 PM	7:00 PM	<i>Open session + Poster session</i>	



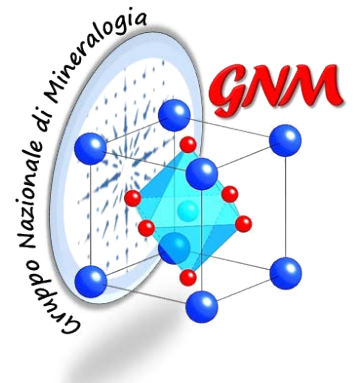
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Tue 7<sup>th</sup>

## MECHANICAL EQUILIBRIUM BAROMETRY

9:00 AM	10:00 AM	<b>Stefan Schmalholz</b>	Pressure and plate tectonics: observations, models and implications for metamorphism
10:00 AM	11:00 AM	<b>Ross Angel</b>	Stress, strain, and equations of state for minerals
11:00 AM	11:30 AM	<i>Coffee break</i>	
11:30 AM	12:30 PM	<b>Evangelos Moulas</b>	<i>Stress and its relaxation from mineral to lithospheric scales</i>
12:30 PM	1:30 PM	<i>Lunch break</i>	
1:30 PM	2:30 PM	<b>Mattia Mazzucchelli</b>	Small scale overpressure and models for elastic barometry
2:30 PM	3:30 PM		Practical to be decided
3:30 PM	4:00 PM	<i>Coffee break</i>	
4:00 PM	5:00 PM		Practical on elastic barometry and equations of state
5:00 PM	7:00 PM	<i>Open session + Poster session</i>	



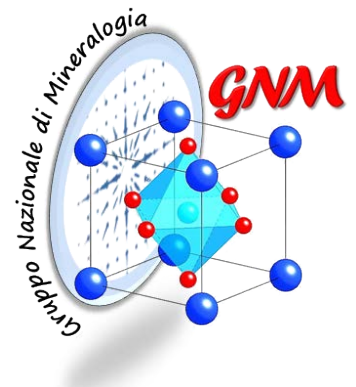
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**Wed 8<sup>th</sup>**

**STRESS DRIVEN REACTIONS**

9:00 AM	10:00 AM	<b>Andrew Putnis</b>	Overview of inconsistencies in metamorphic facies and stress-orientation-dependent reactions during metamorphism
10:00 AM	11:00 AM	<b>Lucie Tajcmanova</b>	The importance of chemo-mechanical coupling in petrology
11:00 AM	11:30 AM	<i>Coffee break</i>	
11:30 AM	12:30 PM	<b>John Wheeler</b>	Fundamental links between stress and chemistry, and their significance
12:30 PM	1:30 PM	<i>Lunch break</i>	
1:30 PM	2:30 PM	<b>Pierre Lanari</b>	A pinch of disequilibrium in a global equilibrium model of metamorphism
2:30 PM	3:30 PM	<b>Patrick Cordier</b>	Minerals under stress: beyond elasticity
3:30 PM	4:00 PM	<i>Coffee break</i>	
4:00 PM	5:00 PM	Practical Lucie Pierre	
5:00 PM	7:00 PM	<i>Open session + Poster session</i>	



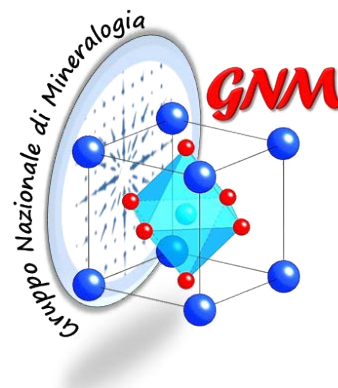
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Thu 9<sup>th</sup>

## FLUID ROCK INTERACTION

9:00 AM

10:00 AM

**Jörg Hermann**

Cooking the subduction soup: Nature and composition of subduction zone fluids

10:00 AM

11:00 AM

**Oliver Pluemper**

Reactive transport processes in metamorphic systems: How fluids 'eat' their way through rocks

11:00 AM

11:30 AM

*Coffee break*

11:30 AM

12:30 PM

**Timm John**

Prograde fluid-rock interaction and fluid release

12:30 PM

1:30 PM

*Lunch break*

1:30 PM

2:30 PM

**Hans Vrijmoed**

Fluid flow

2:30 PM

3:30 PM

**Christine V. Putnis**

Nanoscale observations of mineral replacement reactions

3:30 PM

4:00 PM

**Coffee break**

4:00 PM

5:00 PM

Practical Timm Hans and Oliver

5:00 PM

7:00 PM

*Open session +  
Poster session*



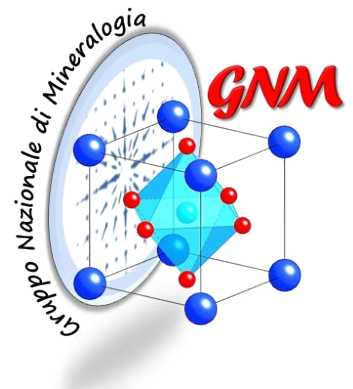
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Fri 10<sup>th</sup>

SEISMICITY AND FAULT ROCKS

9:00 AM	10:00 AM	<b>Giorgio Pennacchioni</b>	Pseudotachylytes: an overview
10:00 AM	11:00 AM	<b>Kjetil Thøgersen</b>	To be decided
11:00 AM	11:30 AM	<i>Coffee break</i>	
11:30 AM	12:30 PM	<b>Giulio Di Toro</b>	Metamorphosis and metamorphism in upper crustal earthquakes
12:30 PM	1:30 PM	<i>Lunch break</i>	
1:30 PM	2:30 PM	<b>Alexandre Schubnel</b>	How thick are pseudotachylyte faults veins? A scaling law from the laboratory to the Field
2:30 PM	3:30 PM	<b>Marco Scambelluri</b>	Intermediate-depth earthquake recorded in eclogitized oceanic lithosphere from the fossil Alpine subduction zone
3:30 PM	4:00 PM	<i>Coffee break</i>	
4:00 PM	5:00 PM	<i>All together</i>	<i>Wrap up and discussion</i>
5:00 PM	7:00 PM	<i>Open session + Poster session</i>	

SAT. 11<sup>th</sup> One day field trip to the pseudotachylytes of the ophiolitic Lanzo Massif (Western Alps). Maximum 50 participants

The fieldtrip will be guided by Giorgio Pennacchioni and Marco Scambelluri.



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