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Summer school on metamorphism at University of Pavia

“The metamorphosis of metamorphism”

Pavia 6th 11th 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; seismicity and fault rocks.

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 pseudotachylytes



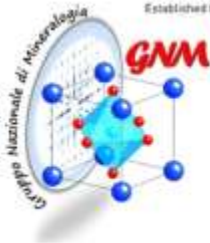
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Mon 6th

HISTORY OF SUBDUCTION AND NUMERICAL MODELS

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	Christian Chopin	History of subduction of continental crust
10:00 AM	11:00 AM	Davide Bigoni	Shear bands, folding and faulting of geological media
11:00 AM	11:30 AM	<i>Coffee break</i>	
11:30 AM	12:30 PM	Giancarlo Sangalli	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	Alessandro Reali	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 7th

MECHANICAL EQUILIBRIUM BAROMETRY

9:00 AM	10:00 AM	Stefan Schmalholz	Pressure and plate tectonics: observations, models and implications for metamorphism
10:00 AM	11:00 AM	Ross Angel	Stress, strain, and equations of state for minerals
11:00 AM	11:30 AM	<i>Coffee break</i>	
11:30 AM	12:30 PM	Evangelos Moulas	Stress and its relaxation from mineral to lithospheric scales
12:30 PM	1:30 PM	<i>Lunch break</i>	
1:30 PM	2:30 PM	Mattia Mazzucchelli	Overpressure at the small scale 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 8th

STRESS DRIVEN REACTIONS

9:00 AM	10:00 AM	Andrew Putnis	Overview of inconsistencies in metamorphic facies and stress-orientation-dependent reactions during metamorphism
10:00 AM	11:00 AM	Lucie Tajcmanova	The importance of chemo-mechanical coupling in petrology
11:00 AM	11:30 AM	<i>Coffee break</i>	
11:30 AM	12:30 PM	John Wheeler	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	Pierre Lanari	A pinch of disequilibrium in a global equilibrium model of metamorphism
2:30 PM	3:30 PM	Patrick Cordier	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 9th

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	<i>Coffee break</i>	
11:30 AM	12:30 PM	Timm John	Prograde fluid-rock interaction and fluid release
12:30 PM	1:30 PM	<i>Lunch break</i>	
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	<i>Open session + Poster session</i>	



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Fri 10th

SEISMICITY AND FAULT ROCKS

9:00 AM	10:00 AM	Giorgio Pennacchioni	Pseudotachylytes: an overview
10:00 AM	11:00 AM	Kjetil Thøgersen	To be decided
11:00 AM	11:30 AM	<i>Coffee break</i>	
11:30 AM	12:30 PM	Giulio Di Toro	Metamorphosis and metamorphism in upper crustal earthquakes
12:30 PM	1:30 PM	<i>Lunch break</i>	
1:30 PM	2:30 PM	Alexandre Schubnel	How thick are pseudotachylyte faults veins? A scaling law from the laboratory to the field
2:30 PM	3:30 PM	Marco Scambelluri	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 11th 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.