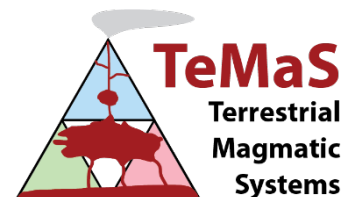


TeMaS workshop

Experiments and numerical modelling to understand magmatic systems



Time: **September, 12-14 2021**

Venue: Golf- und Landhotel Rheinhessen, Hofgut Wißberg,
55578 St. Johann bei Mainz *(It is easiest to get here by car)*

<https://www.golfhotel-rheinhessen.de/>

In case of issues, send a whatsapp/SMS to: (+49)176-713 24233 (Boris)

List of Participants

Last name	Name	Affiliation	Email
Tajcmanova	Lucie	Uni Heidelberg	lucie.tajcmanova@geow.uni-heidelberg.de
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Lavallee	Yan	Uni Liverpool	Yan.Lavallee@liverpool.ac.uk
Kendrick	Jackie	Uni Edinburgh	jackie.kendrick@ed.ac.uk

Program

Sunday, 12/9/2021

15:00 – arrival of participants; discussions on ongoing research, definition of tasks.

18:30 – dinner reservation in restaurant

	Monday (13/9/2021)	Tuesday (14/9/2021)
8:00-9:00	Breakfast	Breakfast
09:00-10:30	Intro to TeMaS (Boris), Intro to the workshop (Lucie), Mini-presentations of the labs (capabilities, research interests & relevant ongoing work; max. 20-25 minutes each) <ul style="list-style-type: none">- Heidelberg labs(Lucie/Sebastian).- Frankfurt labs (Alan/Kevin)	Breakout sessions/draft proposals development
10:30-11:00	Coffee Break	Coffee Break
11:00-12:00	Mini-presentations of the labs: <ul style="list-style-type: none">- Mainz modelling (Boris/Evangelos)	Breakout sessions/draft proposals development

	- Mainz lab (Roman/Stephan/Christoph)	
12:00-12:30	Mini-presentations of the labs: - Frankfurt (Thibault)	Quick wrapping up, consolidations within groups
12:30-13:45	Lunch	Lunch
13:45-15:00	Ongoing work & external experts' insights - Liverpool (Yan) - Edinburgh (Jackie)	Final discussion, next steps and farewell
15:00-15:30	Coffee Break	
15:30-16:00	Identifying new research topics that can be addressed	
16:00-17:30	Breakout sessions (discuss in smaller groups)	
17:30-18:30	Presentations of breakout sessions' outcomes. Identifying new points for tomorrow's breakout sessions	
18:30...	Workshop Dinner	

Aims

At the three participating universities, the experimental capabilities cover classical experimental petrology techniques as well as deformation apparatus. In terms of modelling, we can cover processes across the scales, i.e., from micro-meters to kilometer-scale.

The key question: How can we put the excellent experimental capabilities and the excellent modelling expertise together and contribute to investigate processes within the TeMaS project (and the SFB proposal). In fact, one of the main aims is to discuss the possibilities for joint research projects related to magmatic processes and establish a solid base for future tandem PhD projects (experiments & modelling) for the SFB proposal.

We will have external experts, Yan Lavalée and Jackie Kendrick. They have an enormous experience with experiments and numerical modelling of volcanic systems. They will provide insights and feedback on proposed projects and strategies during the workshop.

Flow:

After the first introduction, the rest of the workshop will be practical, discussing the potential research projects, whether we have all the necessary facilities, what and how can we combine (testing different approaches, i.e. experimental set-ups, numerical modelling), linking the results with the large-scale modelling (Boris' & Thibault's groups), feasibility/limitations of the research projects & experimental or numerical limitations & tuning projects for the best fit with the SFB proposal.

Potential general points for discussion:

- What are we missing in the current approaches (experimental/numerical)? e.g., which data are needed to develop the next generation of models?
- classical petrology experiments vs deformation experiments
- Are the current experimental data sufficient for modelling? i.e., which data do modelers need from experimentalists?

- implementation of numerical models for interpretation of the experimental results
- implementation of numerical models for improving experimental set-ups
- What are the limitations in current experimental and numerical approaches?
- Are modifications of current experimental set-ups/new designs in our labs needed?
- purely experimental projects/purely numerical projects

Potential more specific magma related points for discussion:

- initiation of dehydration processes; melting process coupled with chemo-mechanical modelling
- magma chamber processes & decompression coupled with chemo-mechanical modelling
- diffusion processes & constraining timescales

Mini-presentations:

Representatives of each lab will briefly (~20 min) explain the participants what they can do in terms of experiments, analytics, numerical modelling. They will also provide a brief overview of their experimental/numerical projects and briefly comment how this is/can be adapted to TeMaS project and SFB proposal.