

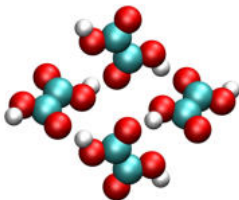
My experience with ERC
and
APES: Accuracy and precision for molecular solids

Jiří Klimeš

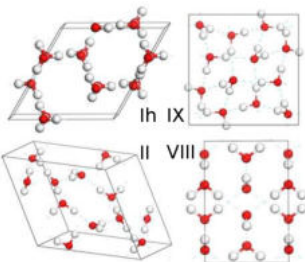
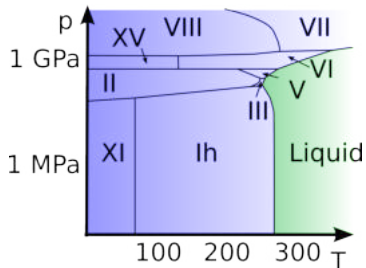
Faculty of Mathematics and Physics

Charles University

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Introduction



Water ice phases

kJ/mol	E_{coh} (Exp.)
Ih	-58.9
IX	-58.5
II	-58.8
VIII	-57.4

Standing out...

- I my project no single big clever idea.
- Rather focused on getting reliable results by developing and combining several approaches.

If you want to succeed. . .

- ✓ Aim to resolve long standing issues.
- ✓ Develop new generation of methodology.
- ✓ Think 10 years ahead.

If you want to fail. . .

- ✗ Use one more technique on your sample.
- ✗ Use another sample in your set-up.

Am I good enough?

Reviewers' questions:

- To what extent has the PI demonstrated the ability to **propose and conduct ground-breaking research**?
- To what extent does the PI **provide evidence of creative independent thinking**?
- To what extent have the **achievements** of the PI typically gone **beyond the state of the art**?

Would I hire the applicant for a tenure-track/permanent position?

(Hopefully) useful tips: Abstract and Page 1

- Important – referee's attention is the highest.
- Referee should get a rough picture of your intention and be excited about it.
- I picked two interesting problems (planetary sciences, drug industry) and sketched a way how my approach would help to solve them.
- Show (shortly) how it could be useful, why is it worth considering, what's new, why you.
- Don't make a very broad and long introduction into your field.
- Don't make a long discussion on a not very related topic, if that's state-of-the-art, the referee will know it.
- Don't bore.

(Hopefully) useful tips: Help the reviewer

Referees must answer questions about the quality of your proposal, make it easy for them (you can also make little sections).

In my “Proposed developments and Objectives” part I had paragraphs for individual work-packages with this structure:

- What's the particular state-of-the-art.
- What are the issues with that.
- What I propose to do to fix it.
- How it will affect the field.

(Hopefully) useful tips: Preliminary data

Interviewer: “I don’t believe that your code is capable of getting data with the precision you need. Do you have some preliminary data?”

Backup slide with preliminary results.

Avoid presenting castles built in the air!



The Salomon supercomputer
at IT4I centre



Some of Metacentrum
clusters at CERIT-SC

5 selected publications/books/software/etc.

Ideally some publication like:

In this paper we did great new science. My contribution was crucial. I had a clever idea that allowed us to do this. Out of my initiative, we also did that. Now many people use this approach.

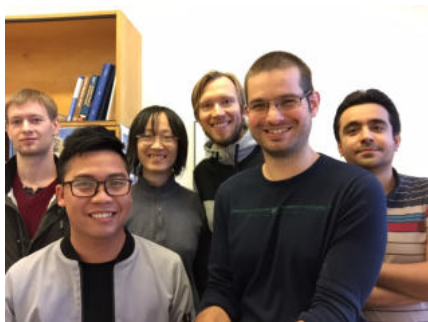
- In my case, one independent paper and publication record overall appreciated by reviewers.
- Independence from PhD supervisor.
- In my panel (PE4-StG), most of grantees 5 to 6 years after PhD. All but one moved after their PhD.

Current status

- One PhD (VN) and two postdocs (IR, PL) hired and working.
- Compute cluster up and running.
- EURAXESS staff helpful with getting long-term residence for postdocs. Standards?
- Student registry helpful with long-term residence PhDs. Standards?
- Environment becoming compatible with non-Czech speaking staff.

When you decide to apply

- Spend time **thinking about the topic** well before.
What are the crucial issues?
- Getting the proposal written takes time – about 2 months for me, so start early.
- **Think the project through** again – how many people will you need, what they will do over the five years? What equipment? ... Then write.
- Try to get a successful proposal.
- Give your proposal to colleagues or friends outside of your field.
- Fix the budget early.
- Discuss the matter with the management at the host institution.



Support



CPU time

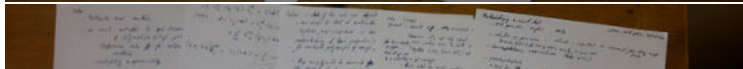
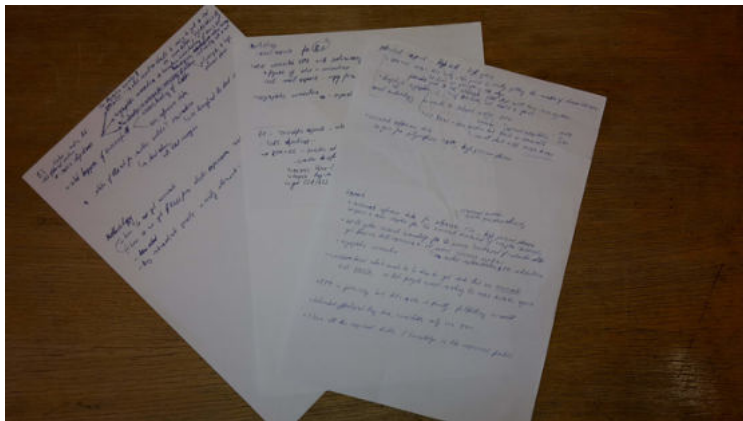


Good luck!

Thank you for your attention.

Timescale of application

- Think hard about possible project well ahead.
- I had GACR application with some technical bits, reused for methodology.
- August to October 2017:



What was on the papers? Things to get first.

- What are the big problems in your field?
 - ...maybe you have a way to fix them.
 - ...problems that people will eventually care about.
 - Shows that you are an expert.
- What is your idea?
 - What research you want to perform.
 - How the research will be done.
 - Do you have a proof-of-principle? How can you get it?
 - Do you have a back-up in case things don't work?
- Who will be your team?
 - What will the people do during the 5 years?
 - Work-packages.