Mylène’s confirmation panel

# Questions asked by the panel

1. If you could go about designing a heat source distribution for a mine **that would give you the best possible system**, what would it look like? Diffuse or point heat source? How does this relate to the distribution of mines and the thermal demand? (this might help you frame the results from your modelling) 🡪 how different configuration might change the results (i.e. what we want vs the footprint of heat extraction)
2. What is included in the CA data? (what is the make up of the temperature data – rock temps, water temps, point log values etc)
3. What is the impact of the shaft on the real recorded temperature value? This is important depending on what you aim to find out i.e. are you interested in what the temperature of the water or rock is X m away from your shaft or are shaft temperatures the most important?
4. Are you aiming to **constrain the uncertainty** of your models? What are the key parameters that will enable you to recreate the real-world data and are you able to recreate the real-world data with multiple parameter configurations? (i.e. is your solution unique? And if not, how are you going to capture that uncertainty?) (This may well be very important when you come to try and provide a tool that might influence policy making around GSHP schemes of any kind)
5. Could use complexity of mines as a proxy
6. Game to play with yourself as you model – if you had unlimited resources what piece of information would you buy to better constrain you model? This will help you understand and define the problem.
7. Chose simple history to communicate to broad audience
8. How much generalised information can be extracted from specific site models?
   1. Need to be clear why the models you choose help answer your research questions
   2. **How to verify what model explains the best the mechanisms.**
   3. An alternative approach would have been to create a **database of all the mine workings in the world and extract commonalities.** (not suggested to be done)
9. What is your critical pathway to success of the PhD? Currently everything is laid out as if it is all critical.
   1. What **risks are associated with the project**? What might go wrong? What contingency plans can you put in place? What is critical and what are the ‘nice-to-haves’? i.e. what if 3D models required?
10. Are you realistically going to be able to stick to your data plan? Is **GitHub a good place** for data?
    1. Concern that this is not well thought out, e.g. could use **Ed datastore or Zenodo** as data repositories (Zenodo gives you a DOI)
11. How will you use the GIS data? What about the grid size necessary?

# Advice from the panel

1. Identify stories for papers are you go through the research – try not to move everything forward and then pull out stories at the end as this is much harder to do.
2. Make time for reflection on your work within your time plan
3. Short papers are just as good (if not better) than long papers so try and focus the paper on just the information needed to tell the story.
4. Try to focus papers to be most useable or applicable so others can easily take the information from them and use it going forward in their work. This will be especially useful if you can show others are being influenced by your research when it comes to your thesis and viva.

# Chris comments

1. What impact the most is the number of mine interconnected rather than single geometries within the mines
2. Pumping drag cold water from above and warm water from below🡪 impact apparent geothermal gradient

# Mark comments

1. Be consistent with the units
2. Use double space bar to have the exp() log() formatting
3. Use longer figure captions not to be force to read the text