

Goals of the Workshop

- Map the landscape of modelling/simulation efforts across the board at Durham
- Identify similarities, differences, new ideas
- Contextualise modelling and its epistemology: models vs. parametrizations
- Explore the link between reality, data and models limitations, challenges, misconceptions, lessons and successes.

Future Steps (?)

- In my opinion this was an excellent & informative workshop → thanks, everybody for participating, discussing, talking.
- · Personally, I've learnt a lot:

maybe most surprisingly that there are more similarities in approach and appreciation than I expected

What are models made for?

understanding of complex systems

- includes understanding and formalising understanding of problem ("algorithmisation"),
 formulating and testing hypotheses, playing and rejecting alternative scenarios
- models/simulations as boot camp for tidying up thought processes and ideas, etc.

informing decision making processes

- a lot of caveats: critical review of science/understanding encoded in the model (e.g. internal consistency) and its calibration to real-world data, careful & concise information about model inputs and limitations, robust quantification of inherent uncertainties
- COVID-19 simulations as prime example of what can go wrong (personal addition: how can you base decisions re policy and **public** health on **private** code?)

Possible outcomes

- Formulating a coherent position on "motivation, practice, and challenges in modelling complex systems"
 - I could imagine a review/position paper, for example in Royal Soc.
- Building a funding portfolio
 - Starting with small-scale funding and maybe prepare for something "big" (e.g. interdisciplinary CDT on modelling/simulation and intrinsic uncertainties, for example with Leverhulme, or something similar specific for health with Wellcome?)