

Final Honour School of Mathematical and Theoretical Physics Part C and MSc Mathematical and Theoretical Physics

Complex Systems

[Lecturer: Mason A. Porter]

Below is listed a broad topic. Write a report on a specific subtopic within that general heading. (That is, you should go into depth on one topic of your choice, though with context, rather than giving a broad overview of percolation.) Your report must include at least some numerical simulations (which you produce) and must include salient discussions of modeling issues and empirical data.

- Percolation (broadly defined)

Your report should be in the format and style of an article for the journal *Physical Review Letters*, and the main text must be no more than 5 typeset pages (including references) and must use their LaTeX style files (a template and style files will be provided). You can also include Supplemental Information with additional figures, calculation, and discussion. In your report, indicate explicitly which ideas are new and which come from existing sources, and use appropriate and explicit attributions for all references (which must include papers reporting original research) or anything else (e.g., including code and figures) from other sources.

[You need not submit scripts for any code that you produce, but you may include them as part of Supplemental Information if you wish.]

[Your report need not contain original research results, though you must use some original research papers (not just review articles or books) as resources.]