

Percolation and related topics II

Exercises will be taken mostly from my book *Probability on Graphs*, published by Cambridge University Press in 2010, and available online at

<http://www.statslab.cam.ac.uk/~grg/books/pgs.html>

Scripts to be handed in to lecturer (or via pigeon-hole) by **12 noon on Thursday 19 January**. Class to be confirmed, but provisionally timetabled for Thursday 26 January at 3pm in MR13. Please keep an eye on the course webpage for possible changes.

1. *A critical exponent inequality*. Exercise 5.7.
2. *Russo's formula*. Exercise 4.9.
3. *Using sharp-threshold*. Exercise 4.11. This is an example of influence theorems in action.
4. *Word percolation*. Exercise 3.11.
5. *FKG for Ising model*. Exercise 7.3.
6. *Russo formula for random-cluster model*. Exercise 8.1.
7. *FKG for random-cluster model*. Exercise 8.2. The expression 'continuation' is misleading and should be overlooked
8. *Weak limits as $q \rightarrow 0$* . Exercise 8.6 (but omit the last sentence).
9. *Comparison inequalities*. Exercise 8.7.
10. *Random-cluster critical points*. Exercise 8.12.
11. *Profit from the vacation!*