

Multifractals and Turbulence

(Phys 616)

Synopsis:

The course will cover the bulk of the material in the book "The weather and Climate: emergent laws and multifractal cascades", Cambridge U. Press, 2013:

<http://www.physics.mcgill.ca/~gang/eprints/eprintLovejoy/Cambridge.TOC.16.1.13.pdf>

More papers, software, presentations, blogs and introductory material may be found on the site:

<http://www.physics.mcgill.ca/~gang/Lovejoy.htm>

Course hours:

The course will meet once a week for 2 -3 hours (with a break half way), in a room to be decided.

Course evaluation:

There will be no exams or regular homeworks. The course evaluation will be based on a student project. This can be individual or in a team. The project could consist of a literature review or - preferably - a research project. The research would most likely be an empirical analysis, but could be numerical or theoretical. The topic would likely be close to the student's PhD project. The student will submit a one paragraph project proposal abstract by the week of Jan. 20 -24. The project will be evaluated from a written report and a 30 minute presentation before the class. The presentations will be during the weeks April 14-25. The powerpoint and report should be submitted electronically. Any figures used in the report should have clear and - if necessary - lengthy explanation: some may ultimately be publishable.