STATS 3001 / STATS 4104 / STATS 7054
Statistical Modelling III
Workshop 2 - into the unknown

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Week 2

In the second workshop you'll try to model bioluminescence. On the way you'll learn lessons about friendship, but also about heteroscedasticity, independence. We'll use those to map out why you need the methods I'll teach (starting in workshop 3!) and exactly which problems those methods solve.

Steps

1. Get the Pelagic Bioluminescence data (Isit.txt). Reminder: all data for the workshops is in a zip called ZuurData.zip. Second reminder: my solutions to workshop 1 can be used to help if you need to remember how to import that data.
2. Have a look at the data. Important variables: `SampleDepth` shows the depth at which data were measured. `Sources` is a count of the number of bioluminescent organisms measured at each depth. `Station` labels which location the data were collected at. Each station has coordinates in lat/long, and the data also comes with Year and Month measurements. (The paper is fascinating- freely available on researchgate, try searching "Seasonal development of a deep pelagic bioluminescent layer in the temperate NE Atlantic Ocean")
3. (individual work and group discussions) Consider how you would model this data. Perhaps try modelling a single station. List the issues that need to be addressed.
4. (Group discussion and discussion with me) I will outline future methods for these workshops. Together we discuss which problem each method addresses - and the challenges flexibility brings.