Project for the course of Bayesian Statistics

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General instructions

In a short report (maximum 7 pages, pdf format, written with Word, Rmarkdown (maybe the easiest way), LaTeX..), present the chosen paper by answering to the questions detailed below. Submit the report by **November 30** (send via email to lucia.clarotto@agroparistech.fr). You can work in groups of 2 or alone. The evaluation will not take into account the fact that you worked alone or in a team.

The papers

Several papers are available in the Folder **Papers** on Google Drive. Half of them are related to tropical plant ecology, half on animal ecology (mostly non tropical). You have to choose one of them and the papers must differ among groups. If you want to work on a different paper on Bayesian modeling in ecology, please ask me if it is good for the project. If it is, you can work on it.

Here, you can write your names and the chosen paper.

The questions

- Briefly introduce the scientific question of the article and the data.
- Describe the model from the article by focusing on the distributions chosen for the priors and the likelihood, and the assumptions made.
- Draw (manually or with a R package) a DAG (Directed Acyclic Graph) of the model (or a simplified version of the model if it is too complex).
- Write the model in JAGS (separating Priors and Likelihood), without actually running the code. If the model is too complex for you, at least try to write a simplified version of the model.
- Discuss the inference strategy chosen by the authors (which type of MCMC sampler, with how many iterations, thinning, ...), trying to interpret the different coding choices.
- If a code is available, look at it and comment on it.
- Discuss the results, the main advantages of the model proposed and the limitations.
- Try to suggest future directions to improve the model.
- If there are any, propose some modifications you would have made to the choices of the authors.
- Imagine a new application where a similar model could be used and explain how you could change it to fit to the new scientific question.

Try to answer to as many questions as possible. I prefer you answering to them in a partial (or incorrect) way rather than not answering at all.