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NUMERICAL SIMULATION OF CHANGES IN QUALITATIVE INTERACTIONS OF PLANT SPECIES

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We consider mathematical models of plant species interactions. Classical models take into account competition between species and within a single species for limited resources in the environment. However, qualitative data collected by ecologists suggest that the interactions may change with small variations in environmental conditions. Since the presence of experimental scientists may have a significant effect on the environment it is desirable to construct models and simulations that will enable reliable predictions to be made.

In this talk, we concentrate on insights that can be obtained from very simple models. We consider in detail the types of behaviour that one might observe, and we show that typical small changes in the environment that could be linked to climate change may lead to very large changes in the ecological outcomes that are observed.