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# Faraway, so close: an agent based model for climate, energy and macroeconomic policy

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**Abstract:** This paper presents an agent based model for the study of coupled economic and climate dynamics that endogenously co-evolve across a range of different scenarios. The model offers a flexible laboratory to test various combinations of macroeconomic, industrial and climate policies both in the context of long run economic growth and medium run transition towards a greener economy. Furthermore, we propose a stochastic description of the feedbacks stemming from a warming and more volatile climate and study how such negative shocks propagate through the economy. For this reason, the model is particularly well suited for the study of extreme climate events, which are usually forgotten by standard integrated assessment models.

**Keywords:** climate change; agent based modeling; growth; technological change; transitions.