



Co-evolution of global carbon stock and discount factors of countries

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In this talk, we present the model copan:DISCOUNT, a conceptual model of the co-evolution of global carbon stock and discount factors of countries. Countries constantly optimize their emissions non-cooperatively as in a standard emissions game (e.g. Barrett 1994). They assign either a low or a high weight to the climate change related damages caused by their emissions in later years. This discount factor is a social trait transmitted via imitation with a probability of adoption depending on exposition and performance. The combined nature-society system typically converges to either a low stock, low discounting fixed point or to a high stock, high discounting fixed point, but can show more complex behaviour depending on parameter settings. Typically, a faster imitation dynamics helps reaching the low-stock equilibrium.