

July 31, 2018

Editors, *PNAS*

Dear Editors,

Please consider our manuscript entitled 'Charting pathways to climate change mitigation in a coupled socio-climate model' for publication in *PNAS*.

The influence of human social processes on global climate trends—as well as the feedback of climate change on human populations—are widely appreciated in the climate change research community. However, the opportunities for adding social dynamics to our increasingly sophisticated climate models remain relatively unexplored. As a result, we think there will be great scholarly interest in research that couples mechanistic models of human social systems to climate models. Here, we develop a coupled socio-climate model that models social processes endogenously, by building on established socio-dynamic models and our previous experience in modelling coupled human-environment systems in other contexts. The paper shows how the timescale of socio-dynamic processes like social learning are crucial determinants of the peak temperature anomaly; how social norms can hurt as well as help climate change mitigation; and how socio-climate models can be used by decision-makers to chart social and economic policy pathways that mitigate climate change more quickly than alternatives.

Potential arms-length reviewers with experience in modelling human-environment systems and/or coupled nonlinear systems include:

1. Nina Fefferman, University of Tennessee Knoxville
(nina.h.fefferman@gmail.com)
2. Alan Hastings, University of California, Davis (amhastings@ucdavis.edu)
3. Fred Roberts, Rutgers University (froberts@dimacs.rutgers.edu)
4. Lou Gross, University of Tennessee Knoxville (gross@tiem.utk.edu)
5. Vincent Jansen, Royal Holloway University of London
(Vincent.Jansen@rhul.ac.uk)
6. Akiko Satake, Kyushu University (akiko.satake@kyudai.jp)

There are no related manuscripts under consideration or in press elsewhere.

We hope you are able to consider our manuscript for publication in *PNAS* and we look forward to hearing from you.

Sincerely,

Madhur Anand

Professor and University Research Chair in Sustainability Science

School of Environmental Sciences, University of Guelph

manand@uoguelph.ca