

September 23, 2016

To the editor,

We (Michael Li and Ben Bolker) would like to submit our manuscript, “Incorporating Periodic Variability in Hidden Markov Models for Animal Movement”, for consideration for publication in *Movement Ecology*. Using high resolution movement data from Florida panthers, and inspired by previous analyses using these data, we explore the ability of hidden Markov models (HMMs) to correctly estimate the number of latent behavioural states. We use simulation studies and analyses of the panther data to show that allowing for diurnal heterogeneity in transition probabilities among behavioural states, a straightforward but little-used extension of the HMM framework, resolves some shortcomings of current models and clarifies the behavioural patterns of panthers.

We confirm that we have no competing interests and that both authors have approved the manuscript, which has not been published or submitted for publication elsewhere, for publication.

We suggest the following peer reviewers: Roland Langrock (roland.langrock@uni-bielefeld.de), Luca Borger (l.borger@swansea.ac.uk), and Juan Morales (jm.morales@conicet.gov.ar).

Sincerely,
Michael Li

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