Geophysical Research Abstracts
Vol. 21, EGU2019-13008, 2019
EGU General Assembly 2019
© Author(s) 2019. CC Attribution 4.0 license.

Stochastic-dynamic hydrometeorological models: Considerations of feedback and stationarity

Alin Andrei Carsteanu and César Aguilar Flores

Instituto Politécnico Nacional (IPN), Escuela Superior de Física y Matemáticas (ESFM), Matemáticas, México, DF, Mexico (alin@esfm.ipn.mx)

Stochastic processes that include a deterministic component have been the model of choice in stochastic hydrometeorology for a number of years now. In this context, the present work tries to shed some light on the interplay between the feedback loops included in the deterministic component of such a model, and the effect they have on the stationarity properties thereof. Different applications are being presented, and the importance of the feedback component in establishing the character of the invariant marginal and joint probability distributions is highlighted. Climate scale implications are also considered, with respect to the possibility of non-uniqueness of those distribution functions.