

A01-P05

INTEGRATING FIELD SCIENCE AND MODELING: CHALLENGES AND PERSPECTIVES

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The feedback between terrestrial ecosystems and climate is anticipated to be very strong under the climate change. However, the transient behavior of this feedback is poorly understood currently, due partly to the uncertainties in parameter estimation. In contrast to the atmosphere or ocean, the data assimilation for the terrestrial ecosystems has a significant obstacle: heterogeneity. In this presentation, discussions on recent progress and perspectives on simulation studies about terrestrial ecology and biogeochemistry.

Individual-based models of terrestrial ecosystems have strengths on predicting future conditions of ecosystems. However, the behavior of individual-based models has many abrupt changes in state variables, and this makes an application of data assimilation methods such as Kalman filter. Here we present novel pilot studies using particle filter to demonstrate the ability in data assimilation for this type of models.