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Biogeosciences Discussions

Interactive comment on "A geostatistical synthesis study of factors affecting gross primary productivity in various ecosystems of North America" *by* V. Yadav et al.

Anonymous Referee #2

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General comments

Numerical predictions of vegetation dynamics are highly uncertain at larger spatial and longer temporal scales. The authors developed a statistical model to understand how the importance of specific covariates changes with temporal resolutions. The work conducted in this paper may contribute to improve the representations of process-based terrestrial ecosystem models in terms of their ability to estimate GPP at different time scales. A shortcoming of this work is that historical ecosystem alterations (e.g., land-use change, nitrogen deposition, and CO2 fertilization) remain unconsidered in the model. The issue of low-frequency modes may need to be addressed in modeling

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of responses to climate change.

Specific comments

p.1466, l.10: Although the references are listed here, it would be helpful for the reader if you summarize how earlier studies related the variables examined in this work to GPP in introduction. This may help to explain why the data used in this study were selected.

Technical corrections

2.2 Gross primary productivity and auxiliary environmental data p.1452, l.6: It is appropriate to add the reference for MODIS LAI and FPAR products (MOD15).

Interactive comment on Biogeosciences Discuss., 7, 1445, 2010.