

Interactive comment on “DasPy 1.0 – the Open Source Multivariate Land Data Assimilation Framework in combination with the Community Land Model 4.5” by X. Han et al.

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As a user who wants to conduct data assimilation research based on CLM4.5, I was very excited and placed high expectation for the release of DasPy. It plays a significant role in the implementation of my research.

1) I think it's hard to implement data assimilation with CLM4.5 for users without a perfect coding capability. Fortunately, DasPy has solved the problem correctly. Although I had studied and practiced data assimilation based on a simple nonlinear model and another land surface model before, it's very hard for me to implement data assimilation based on CLM4.5 because the model is coupled in CESM with other models such as CAM.

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I saw this paper just as I worried about how to implement my research, and DasPy saved a lot of time for me for creating such a data assimilation framework.

2) DasPy concentrates on CLM4.5 specifically. It provides state and parameter joint estimation and can be used to assimilate multivariate such as temperature and soil moisture. In addition to the above mentioned capability, the specificity of just one model offers us much convenience without considering a series of settings related to different models, so it is easier to get started.

3) Furthermore, as an open source framework, its basic parameter and perturbation settings give me a useful reference of my own data assimilation experiment.

4) A more encouraging part is the data post-processing module. DasPy also provides a convenient way for us to visualize the output datasets. And the results of the basic analysis help me to decide whether to do a deeper analysis of the good results or analyze the reasons of the bad results and then try again.

5) In the process of using this system, I find it's easy to understand the clear organization structure, which offers feasibility for users who want to incorporate other data assimilation algorithms into DasPy.

To sum up, DasPy offers us a basic platform in terms of technology to conduct data assimilation research and provides a nice reference example in terms of science. As a user who needs to study data assimilation based on CLM4.5, DasPy is a wonderful choice for me, so thank you so much for the authors provide this open source framework.

From: Gao Meiling (Wuhan University)

Interactive comment on Geosci. Model Dev. Discuss., 8, 7395, 2015.

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