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Atmospheric Measurement Techniques Discussions

Interactive comment on "Regression models tolerant to massively missing data: a case study in solar radiation nowcasting" *by* I. Žliobaitė et al.

Anonymous Referee #1

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- This article has a strong focus on the numerical aspects, and I'm missing the physical underpinning of the regression problem. Of course, one can always take all the explanatory variables as they are, and let regularization do its job. But there are reasons for which some variables are better correlated with the total radiation (Fig. 1) and as a first step I'd recommend to incorporate whatever physical insight you have to sharpen and improve the regression problem. For example, some variables may not vary linearly with the total radiation, thus requiring a prior nonlinear transform to improve the fit. Are there variables which you can transform/exclude on that basis before you start doing the number crunching ?

- In the introduction, you mention both nowcasting and forecasting. These are totally different problems. I can imagine why gap filling is important for nowcasting, The

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forecasting problem, however, requires other types of solutions, with quite different implications of missing data. For that reason, I would clearly state that forecasting is a different issue, and remove the sentence "We are not aware of any research work addressing ..."

- I am missing a discussion on the role uncertainty of the observations, which would be crucial in a bayesian setting. The observables clearly are not all of equal quality, irrespective of their number of data gaps. This is a piece of information that should enter the regression problem. Is it relevant here ? and to what degree ?

Interactive comment on Atmos. Meas. Tech. Discuss., 7, 7137, 2014.