'Evaluating solar radiation forecast uncertainty', by Tuononen et al.
Review, 4 Dec 2018

This is a very well written and structured paper presenting a comprehensive evaluation of solar radiation forecast skill of a global model for one specific location. Care has been taken to pre-process both the observations and forecasts in order to reduce representativeness issues. The methodology presented allows to draw conclusions about the nature of model deficiencies, and could be applied in other locations. The manuscript is basically ready for publication, below are just a few minor comments.

Minor comments

Page 1, line 18: Temporal averaging cannot have an effect on the overall bias. After reading the paper, I assume what the authors mean is that the temporal averaging had little impact on the magnitude of the positive and negative contributions to the overall bias.

Page 6, line 14: 'updated .. to the computationally cheaper ECRAD scheme ..' The new scheme was cheaper but also contained scientific developments which slightly improved forecast skill, according to Hogan and Bozzo (2016).

Page 9, line 1: The bias, or mean error, is usually abbreviated 'ME' (see e.g. Wilks, 1995). To keep with this convention, I would replace 'Mean Biased Error' by 'Mean Error' and 'MBE' by 'ME'.

Page 11, lines 16-17: There appears to be a repetition here. In line 16 '..the relative negative MBE is rather constant around 25%.' And in line 17 'Negative relative MBE is constant throughout the year , ..'

Page 11, line 21: The statement '.. only the forecast of cloud impacting the solar radiation forecast ..' is not quite correct in this context, since aerosol and/or humidity content could be wrong in the model, which could lead to radiation errors even with a perfect radiative transfer model.

Page 12, line 26: Temporal averaging cannot have an effect on the overall bias.

Typological

Page 3, line 17: 'we do not use these values.'

Page 3, line 25: 'recommended by Kotthaus et al. (2016).'

Page 10, line 6: 'For a perfect forecast, all values'

Page 12, line 16: 'occur more frequently than clear sky' (to make it clearer)

Page 12, lines 22 and 31: 'number of .. false alarms .. decreases' and 'and error decreasing'

Page 13, line 22: 'They found a positive radiation bias'

Page 14, line 26: 'the source of the positive bias'