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Geoscientific Model Development Discussions

Interactive comment on "MeteoIO 2.4.2: a preprocessing library for meteorological data" *by* M. Bavay and T. Egger

Anonymous Referee #1

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General Comments: This paper discusses a preprocessing library for numerical models that need meteorological data. This library is designed to address the lack of high quality I/O and preprocessing routines available. This library fills a need given that minimal development time is often given to data preprocessing. The paper goes into detail on the design philosophy, the architecture of the library, and the various components available for users. Emphasis is placed on the importance of developing a library that is powerful yet easy for scientists with a limited computing background to use. A few results demonstrating the effectiveness of the library are shown. The paper is well written and provides valuable discussion on the library. The paper itself does not necessarily break new ground, but the software appears to be of high quality and the discussion in this paper should benefit the scientfic community.

Specific Comments: Related work - There appear to be some other papers on MeteoIO that are not cited in this paper. Please add these citations and discuss the new contributions of this paper compared to previous papers. Discussion of specific competing libraries or software used by scientists and how they compare to MeteoIO would better demonstrate the usefulness of this work. The beginning of section 5 mentions that certain numerical models, applications, and projects rely on MeteoIO. Can you cite some of these to give a better understanding of how and where MeteoIO is being used?

Results - Using a 2006 laptop that is very underpowered compared to modern systems for the results section limits the usefulness of the results. If possible, rerunning the tests on a newer machine would make them much more useful. The results section also seemed fairly minimal. Additional tests to more thoroughly show the effectiveness of the library to perform a variety of tasks would help.

HPC - The paper mentions using MeteoIO for hpc a few times, but provides minimal details and no results. Additional discussion of these capabilities and results showing performance on different core counts on a small cluster or multicore workstation would benefit the paper given the increasing sizes of many numerical simulations and increasing popularity of hpc.

Section 5.1 - This section seems overly detailed given that the results are based on a very small sample size. The graph in particular seems unnecessary. While I agree that demonstrating ease of use is important for any software library, I would prefer to see this information summarized more succinctly and the related graph removed.

Technical corrections: The wording at beginning of section 2.4 should be changed to be more clear. Can you provide details on size of files and amount of data used for tests in figure 11? Figure 12 should have units for the y-axis.

Interactive comment on Geosci. Model Dev. Discuss., 7, 3595, 2014.