

Interactive comment on “Accessible integration of agriculture, groundwater, and economic models using the Open Modeling Interface (OpenMI): methodology and initial results” by T. Bulatewicz et al.

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Generic comments

This paper is well structured, well balanced and very readable. Its scientific relevance is high as it is one of the first publications which has adopted a novel model linking technique such as OpenMI to cross the earth science-human science disciplines for a truly multi-disciplinary exercise.

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Specific comments

1) OpenMI was developed and launched in 2005 with exactly the needs of the authors in mind: bringing together model domains and disciplines to jointly develop an integrated model for assessment of human-environmental issues. Such exercise will generate new insight in the system being studied, but it will also generate new areas for research on the validity of the integrated model. Are the connections scientifically sound? Allow the vocabulary and modelling concepts such combination? Can you combine individual calibrated models together without recalibration?

As one of the first applications in this field, the paper provides valuable lessons for the new modelling paradigm. The authors have in a pragmatic way addressed various of these issues (e.g. page 7226-7227). Unfortunately, some of these aspects remain neglected in the concluding remarks. The authors are requested to highlight in their conclusions that the original parameter set of the agricultural model required replacement for an overall model consistency.

2) In Section 2.3 (Creating Linkable Components), it would be informative to readers to highlight the effort involved in turning the models into linkable components.

Technical correction

Fig.2 is basically incorrect. At run-time, OpenMI Linkable Components communicate directly to each other by memory-based data exchange, i.e. there is basically no 'run-time' system. Figure 2 needs to be corrected, e.g. by showing two linkable components only.

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