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Interactive comment on "Technical Note: The Modular Earth Submodel System (MESSy) – a new approach towards Earth System Modeling" *by* P. Jöckel et al.

Anonymous Referee #2

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GENERAL COMMENTS

This technical note is an important contribution insofar as it describes an initiative that allows an efficient way to couple together software modules describing different domains of the Earth system. Such an initiative is highly welcome as it addresses a problem that is often neglected when working with large models: because of technical hurdles, modules cannot be exchanged or run separately. This, among other things, implies the danger that outdated parametrisations remain in models that submodules are not tested in detail by running them separately and that the impact of different

schemes/parametrisations is not explored through sensitivity calculations.

My main criticism is that the paper does not give enough references, in fact only one single one is included to a sister publication. For example, there should be a citeable reference for the ECHAM model. And there is no discussion of existing Earth system models, e.g., the Earth simulator initiative. There in nothing to say against citations of web-sites, however, I suggest to give them *in addition* to classical references not instead.

I recommend to publish the paper after minor revisions as outlined in this review.

SPECIFIC COMMENTS

The presentation might benefit from using less acronyms, in any case they must be defined before being used (e.g., SMCL).

I recommend some discussion of the issue of running the same model code on vector computers and parallel computers.

Multi-developer issue: There are software tools like CVS that are designed to support multiple developers for a particular project. Perhaps it is worth mentioning this point.

Interactive comment on Atmos. Chem. Phys. Discuss., 4, 7139, 2004.