

## ***Interactive comment on “Integration of terrestrial observational networks: opportunity for advancing Earth system dynamics modelling” by Roland Baatz et al.***

### **Anonymous Referee #2**

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The manuscript discusses a very pertinent problem in Earth System Dynamics and for that reason merits consideration in principle. However, it does so without sufficient technical coherence and depth, transmitting the notion of a vague opinion paper than a thoroughly developed scientific study, which would be needed to provide solid grounds to the argumentation conducted in the manuscript.

The obstacles being already at a scientific language level, where there is no syntax unicity behind fundamental concepts. In practice, each and every term prone to cause confusion should be clearly defined in a rigorous manner, e.g. as the other reviewer pointed out "integration, incorporation, linkage of data model-usage, coupling". Oth-

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erwise this is not a scientific paper, but rather a soft-formulated style of manuscript tailored for a non-scientific audience (which has its merits but is outside the scope of ESD).

While articulate divagations with catchy phrases and buzzwords may be popular in some soft venues in environmental science (e.g. Water Resources Research, WRR) and outreach communication (EOS or general media), this sort of approach feels out of place at ESD. In fact, here a rigorous "hard-science" treatment and discussion of problems should rather be the norm. For every bold statement of opinion, a rigorous scientific argumentation is a fundamental requirement, and in many cases mathematics are actually extremely helpful for that purpose.

My recommendation is thus to restructure and strengthen the paper so that its true scientific DNA comes out and the formulation, methodologies, definitions and overall concepts are all clearly stated. To drop the fashionable WRR-style beauty without substance, and rather take a more sober, theoretical ecology or ESD style scientific construct. The ESD readers will highly appreciate your insightful rigour.

Moreover, a clearer distinction should be made between the known facts and insights, and the novel contributions brought on by this study. The strategies followed in the study should also be more explicitly and rigorous formulated and justified, alongside with their merits and caveats.

At some stages, the reader is left to wonder what has actually been done in practice, and what are essentially suggestions and statements of purpose. The formal procedures belong to the main body of the manuscript, as they are fundamental to bring more substance to the eloquent argumentation.

In order to actually grasp some basic sense of the scientific work beneath the manuscript, the reader has to jump between the main body and the supporting/annex material, where hope begins to emerge that there might be something to this study beyond the vague statements typical of an opinion paper.

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In conclusion, at this stage I cannot enter into specific technical recommendations because I see a profound lack of substance and consistency throughout the manuscript. I enjoyed reading it as a person, but felt utterly disappointed at the lack of substance as a scientist.

Notwithstanding my criticism, I do see potential for this paper to succeed in ESD. This is why, despite disappointed at its content after the initial excitement brought by the abstract, I do not recommend rejection at this stage. I believe in the purpose, I believe in the mission, and I hope that despite the limitations of my own review assessment, it will somehow contribute to help the authors reformulate and strengthen their message.

However, for publication to happen at ESD, it is my firm understanding that it will need to be reformulated more scientifically. And at that stage, we can discuss whether the scientific and technic details will substantiate the author's eloquent argumentation.

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Interactive comment on Earth Syst. Dynam. Discuss., <https://doi.org/10.5194/esd-2017-94>, 2017.