

## ***Interactive comment on “Evolution of hydrological sciences from dimensions of object, discipline and methodology” by L. L. Ren et al.***

### **Anonymous Referee #1**

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This manuscript examines hydrology from three perspectives, that of object, discipline, and methodology, as defined by the authors. As is, I find this manuscript does not add any new knowledge to the field nor does it synthesize existing knowledge to review how hydrology has evolved in various ways.

Based on the title and abstract, the focus of the manuscript is to survey how hydrology has evolved and lay out the frontiers in hydrology over the next decade. The article falls far short of this, treating each topic superficially without appropriate references. For example, the sections describing the three dimensions as laid out in the article consist of 1-2 paragraphs each. The authors choose to divide hydrology into physical, chemical/environmental, and biological. It is unclear how these three branches were chosen, if the authors see them as distinct or interrelated, and what the implications of any of

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this are. It is unclear what is meant by the “Object dimension”. Based on Figure 1, it appears that it’s the objective/problem under consideration. If so, what is the difference between engineering hydrology and water resources hydrology in terms of practice and research questions? Hydrology has a rich history of advances, which are not cited in Sections 3.1 or 3.2. The methodology section does not add any new knowledge or synthesis of approaches. The example of deterministic vs stochastic approaches is not particularly illustrative as one could argue that the discrete and continuous processes are both stochastic.

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