

# ***Interactive comment on “Making better sense of the mosaic of environmental measurement networks: a system-of-systems approach and quantitative assessment” by Peter W. Thorne et al.***

## **Anonymous Referee #1**

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This work present methodology for assessing the level of maturity of measurement networks. The authors face a big challenge defining the meaning of “maturity” of a network after providing metrics for assessing it.

In sections 2 and 3 the authors define criteria and levels of maturity associating a numerical scale to different common aspects of measurement networks.

From my experience the choice of the criteria is correct. This mean that I would have chosen the same criteria, but maybe I would have added some other aspect like geographical extension and density of stations. This because the same approach could be used for a network made of one station. However, the authors in their results explore

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the maturity of 54 networks that are clearly groups of systems and not just individual stations.

The authors are aware of “the inevitable and irreducible level of subjectivity” involved in the process of assessing the scores for individual networks. However, for each network more than an evaluation was performed by distinct assessors (the authors say at least 3), providing estimates with a statistical meaning in some extent. The approach used on my opinion is very similar to those used in modern evaluations of services, but the number of samples used in the statistics looks to be poor. Despite this objection the assessors are not a “normally” distributed sample, but highly qualified PI, that in principle should behave accordingly to the scientific ethic. This could give to the assessment for individual network a certain degree of objectiveness. The overall evaluation of network of networks is based on a more robust statistic and gives a good picture of the distribution of reference to baseline measurement networks.

As the authors suggest in their conclusion this work is a good basis for further discussions and refinements of criteria for assessing existing networks. However, they also implicitly define or state the criteria that should be considered designing future networks and stations that aim to be used for reference. Which by the way are already broadly shared between the scientific communities.

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