

## ***Interactive comment on “Particulate matter characterization of Cauca River water in Colombia” by J. P. Gutiérrez et al.***

**Anonymous Referee #2**

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This paper aims at presenting the particulate matter characterization within the Cauca River in Colombia. This basin is the second biggest river basin of Colombia. Based on two years monitoring distinguishing between dry and wet seasons authors aim analysing some various physico-chemical parameters to answer the question of the origin and sources of suspended within the Cauca basin.

Even if the topic can fit with editorial line of HESS journal, the scientific quality of this paper is clearly not at the required level of the journal. Moreover the paper suffers from many shortcomings :

1) The main objective of the paper is to identify the source of sediment (particle matter). It is never mentioned 'fingerprinting' approach. This is a hot topic in the actual literature. Moreover, the authors tent to discuss sediment sources from various and non-pertinent

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indicators (such dissolved elements, volatile suspended solids, chloro a, N/P ratio). It is very confusing and scientifically very poor. The authors never justified their choices. Clearly the database of this paper doesn't able to achieve the main objective.

2) The literature revue is poor and is dominated by grey literature (more than 50 % at least). Many evidences are written such as the interpretation of TSS/turbidity relationship which is studied for more than 30 years and discussed in a wide and rich literature!!

3) The form is also disappointing (English writing, methods and site descriptions diluted within the results part, we don't know the number of samples, neither at which frequency they were sampled? in which hydrological conditions?). Discussion about sediment sources is only qualitative and hypothetic.

I suggest reformulating the objectives, updating the references, and reorganizing the manuscript to target a more adapted journal for a new submission.

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