



## ***Interactive comment on “Understanding wetland sub-surface hydrology using geologic and isotopic signatures” by P. K. Sikdar and P. Sahu***

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This work presents useful information about surface water and shallow and deep groundwater interactions in the lower part of the deltaic alluvial plain of South Bengal basin and East of Kolkata city. It deals with how exploitation and overexploitation can affect the global ecosystem and how aquifers are vulnerable to pollution. To find this out, authors use sedimentological and isotopic tools. The work is well focused; however some topics can be improved.

Authors present exhaustive sedimentological details and, conversely, rather little isotopic information. Some of the sediment-size studies could be excluded. A larger in size fence diagram (figure 3) could be enough and summarize most of the sedimen-

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tological description, making figure 4 and table 2 unnecessary. It could be useful to include in their discussion additional isotope data from local bibliography that are difficult to obtain for the average reader, and thus provide valuable information.

The use of several meteoric lines leads to confusion. I think that a single local meteoric water line that merges the two datasets would be better.

#### Technical aspects

I advise that intervals of delta values be written from low to high (-30 to -25 instead of -25 to -30).

It has no sense to present an average value of deuterium excess since this is a complex system that includes evaporated, non-evaporated, surface and groundwater, etc. On the other hand individual values in different zones of the basin could be used to characterize the evaporation process and even be used as an additional tracer.

Concerning the way in which tritium detection levels and uncertainties are expressed, I totally agree with Dr. Estaoe suggestions.

#### Figures

Many of the figures are hard to read in their present size. Fig.1 has too much information, so the important facts are difficult to see. Fig.2, idem fig 1. Fig.3 needs to be enhanced and located in figure 1 or 5. Fig 4 could be eliminated. Fig. 5 could be simplified using only the contour lines. Typography should be enlarged.

Fig. 6 a, b are not both necessary. Location labels should be added to Fig. 6.

Figure 7a,b Use only the integer part for axis scale numbering. Use a single local meteoric water line. Identify each groundwater sample and in 7a reduce the numeric figures after the decimal point in the regression equation.

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