

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

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Q. 1. 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 sedimentological 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.

Ans. Suggestions have been incorporated.

Q. The use of several meteoric lines leads to confusion. I think that a single local

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meteoric water line that merges the two datasets would be better.

Ans. In literature, only the LMWLs of Mukherjee, 2006 and Sengupta and Sarkar, 2006 are available. Hence it is not possible to estimate a single LMWL. For clarity the authors prefer to use LMWL of Mukherjee, 2006 in the relevant figures.

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

Ans. Corrections done accordingly.

Q. 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.

Ans. The deuterium excess value has been calculated for the surface water only.

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

Ans. Corrections done accordingly.

Figures Q. 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. Ans. Figure 1 has been modified as per suggestion.

Q. Fig.2, idem fig 1. Ans. Figure is changed according to suggestion.

Q. Fig.3 needs to be enhanced and located in figure 1 or 5. Ans. It is difficult to superimpose the outline of the wetland on fence diagram as they are drawn using two different softwares. The fence diagram has been modified as per suggestion of referee 1.

Q. Fig 4 could be eliminated. Ans. Figure 4 has been eliminated.

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Q. Fig. 5 could be simplified using only the contour lines. Typography should be enlarged. Ans. Typography has been enlarged.

Q. Fig. 6 a, b are not both necessary. Location labels should be added to Fig. 6. Ans. Figure 6b has been deleted. Location labels have been incorporated in the figure.

Q. 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. Ans. Figure is changed according to your suggestion.

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