

Interactive comment on “Satellite data interpretation of causes and controls on groundwater-seawater flow directions, Merseyside, UK: implications for assessing saline intrusions” by S. Mukherjee et al.

Anonymous Referee #1

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The manuscript gives a detailed and interesting discussion of the groundwater situation at Merseyside, UK, using satellite data. The geographical, geological, hydrogeological and geochemical situation is outlined in detail in the first 4 chapters. The 5th chapter introduces the methodology of satellite data interpretation in order to examine saline intrusion and fault locations in the sandstone aquifer. Results are presented in the 6th chapter and discussed thereafter before some conclusions are drawn.

The paper provides a mostly well described application of satellite data interpretation and shows how some characteristics, like faults, can be identified, which can hardly be obtained by other means. Results of the satellite data evaluation explain some strange

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features (steep gradients) observed in the field.

Some minor changes are necessary:

1. Abstract, line 3: "by", not "my".
2. Abstract, line 4: "as much as 300m" (?).
3. Results, line 10: "than", not "that".
4. Discussion, line 22: "this model reveals..."; the model is based on such water table relations; the basic relations, which are given by the authors, are established even without a model.
5. Chapter 7.3, line 8: what is exactly meant with "groundwater discharge" here; is it discharge of groundwater into the river? Please clarify!
6. Chapter 7.3, line 16: "but best of all is that..."; please rephrase the entire sentence and explain in more detail the connection with Fig. 7; in the given formulation this remains unclear.

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