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Discussions

Interactive comment on "Water exchange between the Sea of Azov and the Black Sea through the Kerch Strait" *by* Ivan Zavialov and Alexander Osadchiev

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The purpose of this paper was to analyze water exchange between Sea of Azov and Black sea. For this analyze author used satellite images and wind data. The author use TSM and CHL-a characteristics to trace spreading of AP and BP in the area. However on the page 5, author claims that: "above mentioned characteristics are prone to significant variability and not act as passive tracers". According to this paper AI events are induced by northeastern wind events, with speed >5 m/s, and during all other wind conditions the unidirectional flow towards the north occur. I would agree that during some exceptional events unidirectional flow can take place, but would suggest that water exchange in estuary should be two-way process, with simultaneous outflow and inflow events. As regards spreading of BP in the Sea of Azov using TSM satellite im-

ages, seems very unreliable information. As well as TSM was mentioned as not reliable tracer. Rather it can show wind-induced resuspension of sea-bottom sediments. In my opinion in present stage, presented paper does not give correct or reliable information regarding water exchange between the Sea of Azov and Black Sea. However, current simulations by operative model or some additional measurements could increase value to this paper. Additional questions to the author: 1. As it is mentioned in the paper, circulation in the surface layer in the northeastern part of the Black Sea is dominated by a westward current along the continental slope and an anticyclonic eddy, which is regularly formed between this current and the coast near the Kerch Strait. How big influence eddy have on spreading the freshwater from the Sea of Azov. 2. On the page 6, author mentions that they use Chl-a as a stable tracer for AP in the Black Sea. Does this mean, that satellite images of Chl-a can be used only during big concentrations of Chl-a, and for example in winter periods this method cannot be used?

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