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Dynamics of suspended particulate matter in the Yellow Sea investigated by the ensemble of numerical models and satellite data.

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The visible effect of the suspended particulate matter (SPM) presence in seawater is the change of water color from blue to yellow depending on the SPM concentration under different ambient conditions. SPM concentrations can be derived from ocean color data (e.g. MERIS). The Yellow Sea is characterized by relatively high surface SPM concentrations, typically ranging from 1 to 10 mg/l in the open water and up to 200 mg/l in coastal areas. Here we investigate the dynamics of SPM in the Yellow Sea in the years 2006-2008 with a pre-operational SPM model based on the operational circulation and wave models. The fine sediment content in the seabed is reconstructed using the data available from literature and SPM concentrations derived from MERIS. We assume that the water column is fully mixed due to currents and waves in the shallow regions under storm conditions. Thus, surface SPM content obtained from satellite data can be related to the fine sediment content in the seabed involved in the mixing by resuspension and erosion. Model results are validated using satellite and in-situ observations. The SPM dynamics in the Yellow Sea, its seasonality and temporal evolution will be presented.