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Sensitivity Analysis of Oil Spills Modeling with ADIOS II for Iranian Fields in Persian Gulf

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Abstract : Aboozar (Ardeshir) and Bahregansar are the two important Iranian oilfields in Persian Gulf waters. The operation activities cause to create spills which impacted on the marine environment. Assumed spills are molded by ADIOS II (Automated Data Inquiry for Oil Spills) which is NOAA's weathering oil software. Various atmospheric and marine data with different oil types are used for the modeling. Numerous scenarios for 100 bbls with mean daily air temperature and wind speed are input for 5 days. To find the model sensitivity in each setting, one parameter is changed, but the others stayed constant. In both fields, the evaporated and dispersed output values increased hence the remaining rate is reduced. The results clarified that wind speed first, second air temperature and finally oil type respectively were the most effective factors on the oil weathering process. The obtained results can help the emergency systems to predict the floating (dispersed and remained) volume spill in order to find the suitable cleanup tools and methods.

Keywords : ADIOS, modeling, oil spill, sensitivity analysis
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