A general methodology for beached oil spill hazard mapping and its application to the Atlantic basin coasts

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The current lack of a standardized approach to compute the coastal oil spill hazard due to maritime traffic accidental releases has hindered an accurate estimate of its global impact, which is paramount to manage and intercompare the associated risks. We propose here a hazard estimation approach that is based on ensemble simulations and the extraction of the relevant frequency distributions. We demonstrate that both open ocean and beached oil concentration distributions fit a Weibull curve, a two-parameter fat-tail probability distribution function. The simulation experiments are carried out in all the coastal areas of the Atlantic ocean basin. An indicator that quantify the coastal oil spill hazard is proposed and applied to the study areas.