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TI: **Pollution Hazards off the Southern California Coast: Satellite and In-Situ Observations of Naturally Occurring Oil Seepage and Storm Water Runoff Plumes**

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AB: The coastal waters off southern California are characterized by anthropogenic and naturally occurring pollution hazards. Pollutant-laden storm water runoff plumes are common coastal ocean features throughout the Southern California Bight following winter storms. In Santa Monica Bay, these plumes have been associated with high toxicity and water-borne pathogens. Natural liquid oil seepage is observed throughout the year in the Santa Barbara Channel off Coal Oil Point, and in Santa Monica Bay off Redondo Beach. The size and episodic nature of these phenomena, however, make them difficult to characterize by conventional shipboard sampling. Space-borne synthetic aperture radar (SAR) sensors are well suited to observing them since they provide frequent, synoptic, high-resolution, all-weather observations. The aim of this project is to initially quantify the frequency of occurrence, spatial extent, and dynamics of natural oil slicks and storm water runoff plumes off the coast of southern California using multi-sensor SAR data (e.g., Radarsat, ERS-1, ERS-2). Surfactants from these pollution hazards smooth surface waters, making them readily observable by SAR. These SAR observations will be complemented by other satellite (e.g., ocean color, AVHRR) and coincident field data (e.g., surface currents from HF coastal radar arrays and buoys, winds,

precipitation, discharge) where possible. In particular, we hope to characterize the time-space response of these phenomena to variable oceanographic and atmospheric conditions. In this regard, the observation of natural oil slicks could provide important insights into the movement of accidental oil spills, including likely dispersal patterns. We expect this research will contribute to an improved understanding of pollution hazards in southern California coastal waters, and provide valuable information for coastal management.

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