



The case study of Mopang fuel oil leak in August 2018 in Southwest Black Sea near the Bulgarian town Sozopol

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The cargo ship Mopang loaded with fuel oil sank at depth of 25-30 m near the Bulgarian Black Sea coastline in 1921. Since then rare occasional leaks of oil have been reported by amateur divers. However in July and August 2018 the leaks began to appear more frequent and more intense. The case raised public concerns about the potential beach pollution, deterioration of marine ecological status and attracted media attention, because the location of the leak is just about 5 km from the busy tourist town of Sozopol. The growing public interest to this case has motivated our study: the aim is to identify the leaks on satellite images and to estimate the size, the spatial extent and evolution of the detected oil spills during the summer season.

SAR satellite data has proven its importance for ocean oil spill monitoring and emergency responses in case of unexpected oil leakages. Nevertheless, there are still challenges especially for small scale oil pollution events near the coast. The oil leaks were examined on SAR and VIS data for three months period in the summer of 2018. The variable coverage and intensity is an indication for a continuous leakage. In this study the adaptive threshold algorithm for oil detection is tested for this particular coastal region. The obtained results were validated against an in-situ filming.

In order to improve the dark formation detection algorithms and classification procedures for events, close to the shoreline, different satellite bands from the Sentinel missions are compared. In addition the marine meteorological conditions and their impact on the oil spill evolution is investigated.