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Performance of floating oil booms in unsheltered waters

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Oil booms are a fundamental tool to diminish the impact of an oil spill. They tend to perform reasonably well in sheltered waters, e.g. within a harbour. However, their performance is often inadequate in open water conditions, under waves, winds and currents. And it is precisely in those conditions that they are needed if oil slicks are to be prevented from reaching certain particularly sensitive areas, such as estuaries, rias, etc. (Castro et al., 2010; Iglesias et al., 2010).
In this work the performance of floating oil booms under waves and currents is assessed on the basis of laboratory experiments carried out in a state-of-the-art wave-current flume. Different oil boom models are used, representative of booms with long and short skirts and with different weights. The results show that different booms behave very differently under waves and currents, hence the importance of selecting the boom design that is appropriate for the actual conditions under which it will have to contain the oil slick. Thus, different oil booms should be used for different areas.

References
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