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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Dynamicity of multi-channel rip currents induced by rhythmic sandbars" *by* Yao Zhang et al.

Yao Zhang et al.

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We greatly appreciate the reviewer's thorough reading and insightful comments which have largely improved the quality of present manuscript. We have carefully looked over all the remarks and made revisions stemming from those concerns and specific problems. The most significant changes arise from the inclusion of precise/objective statements, morphodynamic analysis, more field survey information, more related literatures, and more descriptions and discussions. In regard to the seasonal morphology difference, many remote images were collected (Fig. 1), from which only 2 of each beach were shown in the manuscript. The wave data has to be recent years to be representative and 2-year period should be enough for the open coast. As the reviewer suggested, we will have our manuscript proof read by an English-speaking colleague

to minimize the possible misunderstanding of the scientific content.

The major purpose of present work is to investigate the multi-channel rip circulation system and its dynamicity under season-varying wave conditions (especially wave directions), which is frequently observed in the real world without enough attention addressed. The quantitative scientific findings are expected to be useful to the understanding and precaution of rip currents. While present work focuses on the mechanism study, the larger scope of China's beach safety statistics, nation-wide rip current investigation and risk distribution will be introduced in future work which is undergoing (Fig. 2, 3).

Again, we totally acknowledge the reviewer's comments and as well extend our appreciation to the editor for the effort.

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Fig. 1. Google Earth images at Qingao Bay on: (a), August 5, 2010; (b), November 27, 2013; (c), August 23, 2015; (d) December 18, 2016

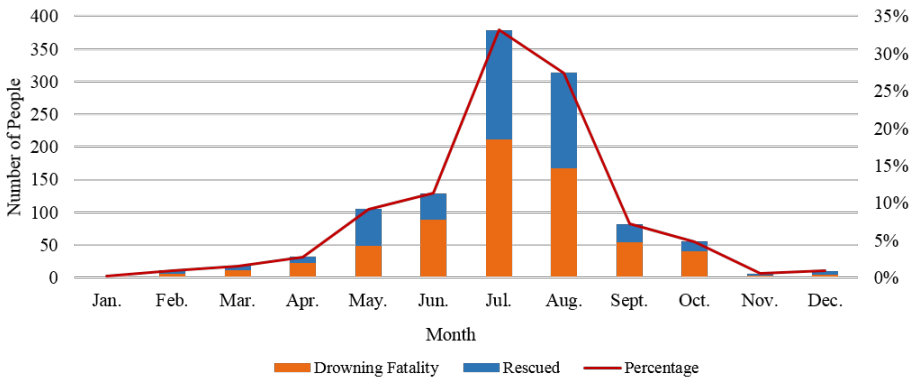

Fig. 2. China's beach safety statistics from 2010-2019

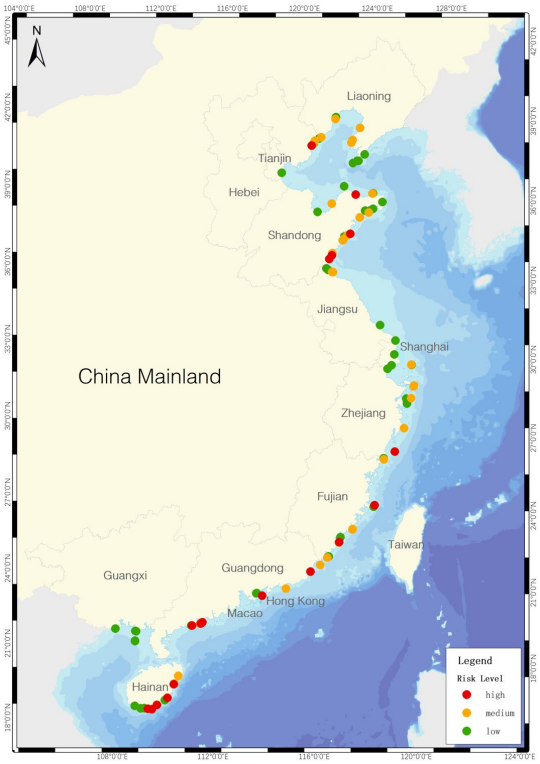

Fig. 3. Risk distribution of the rip current at China's major recreational beaches, based on morphodynamic calculation, remote images, and field investigation