



## **Erosion-Corrosion and Stress Corrosion Characteristics of Hydraulic and Marine Structures**

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### **Message from the Guest Editors**

The environment in which hydraulic and marine structures (such as gate, pipe, ship, platform, etc.) are located is a typical fluid–solid coupling system. In areas with rapid flow transitions, cavitation might cause pitting damage, destroying the structural integrity. At the same time, the water flow and the mixed solid impurities will cause erosion and wear to the structure, and the durability of key parts will be reduced. On the other hand, in a corrosive fluid environment, electrochemical corrosion is inevitable, which could induce the degradation of structures. Furthermore, the synergy of mechanical stress and corrosion (including but not limited to stress corrosion, erosion–corrosion, tribo-corrosion, and corrosion fatigue) could lead to premature failure of hydraulic and marine structures. As a result, exploring the dynamic response under the action of fluids, and detecting the material damage characteristics of structures under the coupling of multiple loads (hydrodynamics, corrosion, wear, etc.) is significant for providing guidance and support for strength assessment and remaining life prediction of hydraulic metal structures and marine structures.

