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Speech Title: High-Precision Localization of Underwater Multi-Static Targets with Optimal Transport Framework

Abstract: Facing the demands of underwater security defense in key maritime areas, constructing a multi-static sonar detection system with strong anti-interference and high resolution to achieve high-precision multi-target localization is a research frontier and hotspot in the field of underwater acoustics. Addressing challenges such as low target resolution caused by mutual interference among multiple targets and large localization errors due to insufficient effective observation samples in multi-static sonar detection, this study explores a novel high-precision target localization method based on multi-source data fusion, and conducts numerical simulations and sea trials. The research outcomes will provide fundamental theories and new methodologies for high-precision localization of underwater multi-static targets using multi-static sonar, ultimately laying a solid foundation for underwater security defense in key maritime areas and strategic passages.