Simulating Underwater Plasma Sound Sources to Evaluate Focusing Performance and Analyze Errors(PDF)

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Title: Simulating Underwater Plasma Sound Sources to Evaluate Focusing Performance and Analyze Errors

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摘要: Focused underwater plasma sound sources are being applied in more and more fields. Focusing performance is one of the most important factors determining transmission distance and peak values of the pulsed sound waves. The sound source’s components and focusing mechanism were all analyzed. A model was built in 3D Max and wave strength was measured on the simulation platform. Error analysis was fully integrated into the model so that effects on sound focusing performance of processing-errors and installation-errors could be studied. Based on what was practical, ways to limit the errors were proposed. The results of the error analysis should guide the design, machining, placement, debugging and application of underwater plasma sound sources.

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