

Abstract Submitted
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Shock focusing in water by convergent shell structures CHUANXI WANG, VERONICA ELIASSON, University of Southern California — Lab scale experiments on shock focusing in water in convergent thin shell structures have been designed and performed. Thin shell structures made of two types of materials have been tested separately; carbon fiber and low carbon steel. The geometric shape of the structures is given by a logarithmic spiral, which is believed to maximize the amount of energy reaching the focal region from previous research. During an experiment, a shock wave in water is generated by projectile impact. High-speed schlieren photography is applied simultaneously to visualize the shock dynamics during the focusing event. Results show that the thin shell structure and the shock wave in the water are fully coupled and the interaction has some unique features, such as wave train patterns in water.

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