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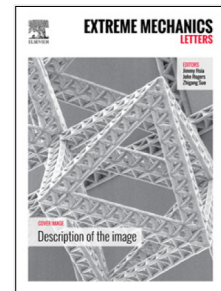
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Cavitation bubble dynamics during pulsed laser ablation of a metallic glass in water

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ABSTRACT:

We report a cavitation bubble formation in water induced by nanosecond pulsed laser ablation of a Zr-based (Vitreyloy 1) bulk metallic glass target. Only the first bubble occurs due to an explosive-boiling-type ablation of the target. A theoretical model is developed to quantitatively describe the bubble nucleation and its initial growth. The results demonstrate that the laser-induced plasma can induce the nucleation of the bubble. Furthermore, it is revealed that the initial bubble growth is approximately adiabatic and inertial, obeying the Rayleigh-Plesset theory, albeit the significant

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