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Visualization of atmospheric shockwave from underwater explosion SHIHORI JINNOUCHI, KEITA ANDO, Keio Univ — In the context of underwater explosions, much attention has been put on acoustic phenomena (including shockwaves and cavitation) in the water. However, to the authors' knowledge, little is studied regarding shockwave transmission from underwater explosions to the atmosphere. The transmitted shock dynamics will be of importance when it comes to examining ignition in the case of flammable gases over the water interface. Here, we perform visualization of shock transmission from laser-induced underwater explosions to the atmosphere. Nano-second pulse laser at 1064 nm is focused into water to create a spherical shockwave. The shock interaction with an air-water interface is recorded by a high-speed camera with pulse laser backlighting. The evolution of the transmitted shockwave in the air is examined with the aid of the Ranking-Hugoniot relation and Euler flow simulation.

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