

Abstract Submitted
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Investigation on Liquid Atomization Mechanism in Sparkling Fireworks¹ CHIHIRO INOUE, The University of Tokyo — The physics behind the beauty of sparkling fireworks is a mystery over 300 years. There are two types of liquid atomization phenomena; the ejection of streaks of light from a mother fireball, and the spreading streaks burst downstream to produce pine needle-like streaks of light. In the present study, the mechanism of the atomization process in sparkling fireworks is investigated by using a high-speed video camera. It is clarified that bursting bubbles on the mother fireball is essential for the ejection of droplets, which will be streaks of light. The secondary bursting of the light streaks is due to the sudden expansion and catastrophic bursting of spreading droplets. The results of temperature variance of spreading droplets and those of the TG-DTA-MS are also discussed.

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