

Abstract Submitted
for the DFD13 Meeting of
The American Physical Society

Atomization in Sparkling Fireworks CHIHIRO INOUE, University of Tokyo, MITSUO KOSHI, Yokohama National University, HIROSHI TERASHIMA, TAKEHIRO HIMENO, TOSHINORI WATANABE, University of Tokyo, SPARKLING FIREWORKS TEAM — The physics behind the beauty of sparkling fireworks has not been clarified yet due to a lack of coherent visualization results. In the present study, atomization process in sparkling fireworks is elucidated by using a high-speed video camera. In the first-half sequence of the fireworks, the fireball repeatedly expands, bursts, and shrinks due to the high pressure gas inside the fireball. In contrast, in the last-half sequence, the bubbly fireball slightly deforms, and small bubbles burst on the fireball. A scenario of droplets generation is as follows: a liquid thread extends from the bottom of the bursting fireball, and fragments into droplets. Thus the droplets originate from inside the fireball rather than from its surface.

Chihiro Inoue
University of Tokyo

Date submitted: 02 Aug 2013

Electronic form version 1.4