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High-speed ethanol micro-droplet impact on a solid surface[1]
YUTA FUJITA, AKIHITO KIYAMA, YOSHIYUKI TAGAWA, Tokyo Univ of Agri Tech — Recently, droplet impact draws great attention in the fluid mechanics. In previous work, micro-droplet impact on a solid surface at velocities up to 100 m s^{-1} was studied. However the study was only on water micro-droplets. In this study, we experimentally investigate high-speed impact of ethanol micro-droplets in order to confirm the feature about maximum spreading radius with another liquid. A droplet is generated from a laser-induced high-speed liquid jet. The diameter of droplets is around 80 μm and the velocity is larger than 30 m s^{-1}. The surface tension of ethanol is 22.4 mNm^{-1} and density is 789 kgm^{-3}. Weber number ranges We >1000. By using a high-speed camera, we investigate the deformation of droplets as a function of Weber number.

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Yuta Fujita
Tokyo Univ of Agri
Tech

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