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High-speed x-ray tomographic imaging of a ball impacting on sand TESS A.M. HOMAN, Physics of Fluids, University of Twente, Enschede, The Netherlands, EVERT C. WAGNER, ROB F. MUDDE, Multi-Scale Physics, Delft University of Technology, The Netherlands, DETLEF LOHSE, DEVARAJ VAN DER MEER, Physics of Fluids, University of Twente, Enschede, The Netherlands — When a ball is dropped in fine, very loose sand, a cavity is formed inside the sand bed which collapses, creating a jet and entraining an air bubble. At a fixed depth below the surface, the shape and dynamics of a horizontal cross section of the cavity are studied by means of high-speed x-ray tomography system. Repeating the procedure at different depths provides a full time-resolved reconstruction of the cavity within the sand bed. Using this reconstruction we test several hypotheses on the process of sand jet formation.

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