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Simultaneous Reference- and Pressure-Image Acquisitions for Unsteady Pressure-Sensitive Paint Measurement KENSUKE MIYAMOTO, TAKESHI MIYAZAKI, The University of Electro-Communications, HIROTAKA SAKAUE, JAXA — Simultaneous reference- and pressure-image acquisitions using two-color unsteady pressure-sensitive paint (PSP) and a stereo adaptor are presented. Unsteady PSP gives two-color luminescence, which is related to reference- and pressure-images, respectively. Two band-pass filters matching with reference- and pressure-luminescence, respectively, are mounted in front of a stereo adaptor to capture only reference- and pressure-images. The adaptor is connected to a fast frame rate CCD camera that can acquire continuous unsteady pressure field. Our acquisition system has an advantage for unsteady PSP measurements that fluctuate and/or vary reference image in time. The validity of this system is discussed. A demonstration of the present system in unsteady pressure field with model fluctuation is included in the final version.

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