Pulsed shear motion in a three-dimensional dusty plasma under microgravity conditions\textsuperscript{1} BIN LIU, JOHN GOREE, The University of Iowa, MIKHAIL PUSTYLNIK, HUBERTUS THOMAS, Deutsches Zentrum fr Luft- und Raumfahrt, Wessling, Germany, VLADIMIR FORTOV, ANDREY LIPAEV, ALEXANDER USACHEV, VLADIMIR MOLOTKOV\textsuperscript{2}, OLEG PETROV, Joint Institute for High Temperatures of the Russian Academy of Sciences, Moscow, Russia, MARKUS THOMA, Justus-Liebig-Universitt Giessen, Giessen, Germany — Shear motion of dust particles in a strongly-coupled dusty plasma under microgravity conditions was investigated using the European Space Agency’s facility PK-4 on the International Space Station. The particles were trapped in a plasma powered by a DC voltage that switches its polarity periodically. They self-organized themselves into a structure resembling a solid or a cold liquid. A manipulation laser beam pushed a slab of particles to move through the surrounding sample region. The power of the laser was modulated, causing a sudden onset of pulsed shear motion among the particles. We tracked particle motion using video cameras. Results including the spatial and temporal variations of dust fluid velocity will be shown.

\textsuperscript{1}All authors acknowledge the joint ESA/Roscosmos Experiment Plasmakristall-4 onboard the International Space Station. Work was partially supported by DLR Grant Nos. 50WM1441 and 50WM1742. Work at Iowa was supported by NASA-JPL subcontracts 1573629 and 1579454, and NSF Award No. 1740379.

\textsuperscript{2}Our dear colleague Vladimir Ivanovich Molotkov passed away unexpectedly on July 11, 2019.

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Date submitted: 24 Jun 2020

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