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Sheared and unsheared rotation of driven dust clusters DIETMAR BLOCK, JAN SCHABLINSKI, JAN CARSTENSEN, FRANKO GREINER, ALEXANDER PIEL, University of Kiel, Germany — In dusty (complex) plasmas rotating dust clusters with either rigid body rotation, horizontally sheared rotation, or vertical sheared rotation are observed in axial magnetic fields, rotating electric fields, rotating neutral gas columns, and in laser manipulation experiments. Our experiments and simulations now add a small anisotropy of only a few percent to the confinement potential. Such anisotropies are hardly avoidable in experiments and therefore their role should be carefully studied to avoid misinterpretation of the experimental observations. This contribution reports on systematical investigations of the motion of driven dust clusters in a slightly anisotropic confinement. Special attention is paid to the questions whether an unsheared drive always results in an unsheared cluster rotation and how symmetry and particle arrangement affect the dynamical response of the system.

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