Angular dynamics of small crystals in viscous flows\textsuperscript{1} JOHAN FRIES, JONAS EINARSSON, BERNHARD MEHLIG, Department of Physics, Gothenburg University — The angular dynamics of a very small ellipsoidal particle in a viscous flow decouples from its translational dynamics, and the particle angular velocity is given by Jefferys theory. It is known that cuboid particles share these properties. In the literature a special case is most frequently discussed, that of axisymmetric particles, with a continuous rotational symmetry. Here we compute the angular dynamics of crystals that possess a discrete rotational symmetry and certain mirror symmetries, but that do not have a continuous rotational symmetry. We give examples of such particles that nevertheless obey Jefferys theory. But there are other examples where the angular dynamics is determined by a more general equation of motion.

\textsuperscript{1}Vetenskapsrådet [grant number 2013-3992], Formas [grant number 2014-585], Bottlenecks for particle growth in turbulent aerosols from the Knut and Alice Wallenberg Foundation, Dnr. KAW 2014.0048, MPNS COST Action MP1305 Flowing matter.