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Viscous spreading of an inertial wave beam in a rotating fluid PIERRE-PHILIPPE CORTET, CYRIL LAMRIBEN, FREDERIC MOISY, Laboratoire FAST, CNRS UMR 7608, Universite Paris-Sud, Universite Pierre-et-Marie-Curie, ROTATING TURBULENCE TEAM — We report experimental measurements of inertial waves generated by an oscillating cylinder in a rotating fluid. The two-dimensional wave takes place in a stationary cross-shaped wavepacket. Velocity and vorticity fields in a vertical plane normal to the wavemaker are measured by a corotating Particle Image Velocimetry system. The viscous spreading of the wave beam and the associated decay of the velocity and vorticity envelopes are characterized. They are found in good agreement with the similarity solution of a linear viscous theory, derived under a quasi-parallel assumption similar to the classical analysis of Thomas and Stevenson [J. Fluid Mech. **54** (3), 495–506 (1972)] for internal waves.

Jean-Pierre Hulin
Laboratoire FAST, CNRS UMR 7608,
Universite Paris-Sud, Universite Pierre-et-Marie-Curie

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