

Abstract Submitted  
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**Surface flow, shapes and stability of rotating triangles on a water surface** TESS HOMANN, RAYMOND BERGMANN, Physics Dept. and Center for Fluid Dynamics, Technical University of Denmark, PASCAL HERSEN, Laboratoire Matière et Systèmes Complexes, CNRS & Université Paris, ANDERS ANDERSEN, TOMAS BOHR, Physics Dept. and Center for Fluid Dynamics, Technical University of Denmark — We present an experimental study of polygons forming at the free surface of a water flow driven by a rotating bottom and confined to a stationary cylinder, as described in Jansson et al., Phys. Rev. Lett. **96**, 174502 (2006). In particular, we study the case of a triangular structure, either completely floating or with a dry center. For these structures, we present measurements of the surface flows, the surface shapes and the process of structure formation, and we analyze our results in terms of a collection of discrete vortices. We show that partial blocking of the surface flow destroys the triangular structure and reestablishes the circular symmetry.

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