

Abstract Submitted  
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**Flow instabilities in the wake of a thin disk** SOPHIE GOUJON-DURAND<sup>1</sup>, PMMH (UMR 7636 CNRS - ESPCI - Univ. Pierre et Marie Curie - Univ. Paris Diderot), PIOTR SZALTYS, Warsaw Univ. of Technology, Faculty of Power and Aeronautical Engineering, Poland, JOSÉ E. WESFREID, PMMH (UMR 7636 CNRS - ESPCI - Univ. Pierre et Marie Curie - Univ. Paris Diderot) — Instabilities of the flow behind a thin disk were investigated. We are presenting systematic experiments with flow visualisation and PIV measurements in order to measure the velocity field in the wake of a disk in a water channel. The measurements were performed in the range of Reynolds numbers from 20 to 400, where stationary and oscillatory instabilities appear. From these experimental data, we are studying the azimuthally modal decomposition of the streamwise vorticity in an instationnary case, which allow us to describe the evolution of perturbations and obtain the bifurcation branches of the instabilities. In addition, some results were obtained from measurements of the transversal vorticity which allow to compare the evolution of the circulation. Finally, we are comparing these results with similar ones obtained in previous studies of the flow behind spheres.

<sup>1</sup>Univ. Paris 12

José E. Wesfreid  
PMMH (UMR 7636 CNRS - ESPCI -  
Univ. Pierre et Marie Curie - Univ. Paris Diderot)

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