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**Instabilities in the Wake of a Thin Disk with Differents Aspect Ratio** TOMASZ BOBINSKI, Warsaw Univ. of Technology, Poland, SOPHIE GOUJON-DURAND, TRISTAN CAMBONIE, JOSE EDUARDO WESFREID, PMMH (ESPCI-CNRS) Paris, France — Flow past a disk was investigated experimentally in a water channel. Systematic experiments with flow visualisation and PIV measurements are presented in order to characterize the flow instabilities. As an extention of previous work, we present results of investigations on disks with different aspect ratio (diameter/thickness) varying from 1 to 24, in the range of the Reynolds numbers from 50 to 500, where stationary and oscillatory instability appear. It is presented the influence of the disk aspect ratio on the evolution of perturbations, the corresponding value of onset instability and the bifurcation branches on the instability. On basis of obtained in PIV measurements vorticity fields it was performed modal analysis. We present results of 3 dimensional, 3 components velocimetry showing detailed information about the physical mechanism of hairpin generation and compare with results in the case of instabilities behind a sphere.

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