

Benchmarking rotating flow with free surface deformation

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The free surface deformation generated by a disk rotating at the bottom of a container partially filled with fluid is an exciting challenge for numerical simulations. The shape of the free surface has shown surprising patterns in experiments performed by different research groups. However, for many regimes (non axisymmetric, dewetted disk, sloshing), an accurate comparison with numerical simulations is clearly missing. We will present the different existing regimes of such flow and show results of comparison between different numerical codes on few selected regimes. Some preliminary measurements on a recent experimental set up will also be presented and we will discuss the relevance of a benchmark on such flow.