Swirling flows with imposed radial flow - a model for a cold accretion disk? RICH KERSWELL, Bristol University — There is a lot of current interest in exploring whether Keplerian-type flows ($dI/dr > 0$ but $d\Omega/dr < 0$ where I is the angular momentum and Ω the angular velocity) can harbour nontrivial hydrodynamic flows in order to explain the inferred presence of turbulence in cold accretion disks (e.g. Balbus, Nature 2011). Invariably, the very small (accreting) inflow is neglected in accretion disk models. I will discuss how this could be a dangerous omission by building upon recent work (Gallet et al. 2010, Ilin & Morgulis 2013) which shows linear instability of otherwise-stable Taylor-Couette flows when radial flow is imposed.

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