Linear stability analysis of a disc: effect of porosity.

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Axisymmetric wake of a disc placed normal to the incoming uniform flow. Focus from the trivial solution upto the onset of several unstable sutuations. Two main parameter is explored (Reynolds number, and porosity). Maybe we will explore some swirl. what about aspect-ratio. Understand basic mechanism of classical scenario with the effect of a porosiy.

FIG. 1: Sketch of the geometry .

I. INTRODUCTION

II. GOVERNING EQUATIONS

axisymmetric

III. NUMERICAL METHOD

FreeFem+ here modelling of the porosity. [1]

IV. RESULTS

A. The solid case: $\alpha = 1$

B. The porous case: $\alpha < 1$

C. Direct numerical simulations for $\alpha = 1$

some DNS simulations?

V. CONCLUSIONS

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[1] M. C. Thompson, K. Hourigan, and J. Sheridan, Exper. Thermal Fluid Sci. **12**, 190 (1996).