

Some techniques for the stabilization of the pressure discretization in Reduced Order Models of incompressible fluids

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SUMMARY

In this talk we address the stability of the pressure discretisation for Reduced Order Models (ROMs) of incompressible flows. For Galerkin discretisations of incompressible fluids, the stability of the pressure is guaranteed through the discrete inf-sup condition for the duality velocity - pressure gradient. This property can be extended to ROMs by adding velocity “supremisers” (the Riesz representation of the pressure gradient on the velocity space, cf. [2]). However it is rather costly and several alternative strategies can be carried on. Among them, stabilisation techniques (cf. [1]) or post-processing of the pressure (cf. [3]), that we shall present in this talk.

Keywords: Reduced Order Modelling, Incompressible flows, Pressure discretisation, Stabilisation

AMS Classification: 65Mxx, 76Dxx

References

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