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ERROR ESTIMATION AND ADAPTIVITY FOR TURBULENT FLOW

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Abstract. We present recent advances on a posteriori error estimation and adaptivity for turbulent flow, including deforming domains, fluid-structure interaction and high performance computing implementation in the open source software Unicorn [1]. Fluid-structure interaction is formulated in a Unified Continuum framework [2], and turbulent fluid flow is modeled by G2 implicit large eddy simulation with residual based stabilization modeling the effect of subgrid scales, and with skin friction boundary conditions modeling turbulent boundary layers. Examples are presented, including applications to aerodynamics, aeroacoustics and biomedicine.

REFERENCES

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