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GOAL-ORIENTED ERROR ESTIMATION AND ADAPTIVITY FOR THE TIME-DEPENDENT LOW-MACH NAVIER-STOKES

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Abstract. We present a goal-oriented algorithm for error control and adaptivity, targeting the low-mach compressible Navier-Stokes equations. The algorithm, using the GRINS computational framework, is illustrated first for stationary problems and then for time-dependent problems. Issues related to stabilization and linearization are highlighted in the former case, while the interplay between storage, efficiency, and numerical accuracy of the forward and adjoint solutions is examined in the latter case.