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BENCHMARK SOLUTIONS OF DRIVEN POLAR CAVITY FLOW AT HIGH REYNOLDS NUMBERS

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Abstract

*Benchmark numerical solutions of 2-D steady incompressible flow in a driven polar cavity at high Reynolds numbers are presented. The Navier-Stokes equations in streamfunction and vorticity formulation in cylindrical coordinates are solved with an efficient numerical method. The polar cavity is considered as both driven from inside wall and from outside wall. Using a fine grid mesh with 513*513 points, the steady driven polar cavity flow is solved for □□ eR<_17500. The computed results are compared with experimental and numerical results. Detailed numerical results are presented.*

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