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Low-Re flow past an isolated cylinder with rounded corners

Wei Zhang, Ravi Samtaney

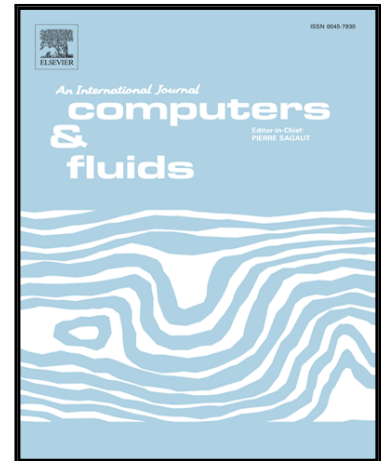
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Highlights

- DNS on the separation and transition of flow past a partially rounded cylinder.
- The effect of the corner radius of the cylinder is studied.
- Investigation on time-averaged flow, unsteady flow, turbulent statistics and 3D flow pattern.
- There are drastic variations of the flow pattern between the square cylinder and the partially rounded cylinder, and between the latter and the circular cylinder.
- Non-time-periodicity is significant in the shear layer and at the reattachment point.

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