5. CONCLUSIONS

In this paper, the CBOS-MSF finite-element method was adopted to simulate the potential flow field around a circular cylinder with rear transverse diaphragm at different diaphragm lengths under *Re*=200. The simulation shows that the addition of the rear transverse diaphragm can effectively suppress the vortex shedding in the wake region, reduce the pressure difference between the upper and lower surfaces of the circular cylinder, and greatly improve the flow around the circular cylinder. When the diagram length was sufficiently long (*L/D*=7), the vorticity of the upper and lower shear layers was completely dissipated during the backward movement along the transverse diaphragm, eliminating the occurrence of vortex shedding. The simulated laws of the flow velocities and flow field eigenvalues were consistent with the results of the previous studies. The research findings provide a valuable reference for similar studies in future.

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