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Vortex flow generator utilizing synthetic jets by diaphragm vibration

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Highlights

- A miniaturized device which can generate a vortex flow of high velocity in a confined system.
- The air flow is actuated by a lead zirconate titanate (PZT) diaphragm.
- The vortex flow is observed by a high-speed camera, and its velocity is measured by an array of hotwires.
- Flow is characterized by a lump model consisting of a sink and a free vortex.
- Simulated results using OpenFOAM shows good agreement with experiment.

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