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**Levitating a cylinder on a thin viscous film** MOHIT DALWADI, University of Oxford, RADU CIMPEANU, University of Warwick, HILARY OCKENDON, JOHN OCKENDON, TOM MULLIN, University of Oxford — We demonstrate that it is possible to levitate a circular cylinder placed horizontally on a vertical belt covered in a thin layer of oil by moving the belt upwards at a specific speed. The cylinder rotates and is balanced at a fixed location on the belt. Levitation occurs solely through viscous lubrication effects. We present the results of an experimental and numerical study of this fluid-structure interaction.

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