

Abstract Submitted
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Vortex rings with swirl STEFAN LLEWELLYN SMITH, MAE, UCSD,
VINCENT MORIN, ENS Lyon — Vortex rings with azimuthal vorticity $\zeta \propto r$, where r is the distance from the axis of symmetry, have an unsteady contour dynamical formulation on the one hand and a family of steady solutions due to Norbury on the other hand. We consider the effect of adding swirl to such rings. Taking the swirl $w \propto r^{-1}$ maintains the contour dynamics formulation, but it becomes necessary to add a vortex sheet at the boundary of the rings. Steady and unsteady solutions are presented, and the relation of these results to previous work is discussed.

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