

Abstract Submitted  
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**Analytical solutions for hollow vortex pairs in a channel** CHRISTOPHER GREEN, DARREN CROWDY, Imperial College London — Motivated by the problem of vortex rings travelling along tubes, we study the two-dimensional analogue comprising a counter-rotating vortex pair travelling along a straight-walled channel. By modelling the vortices as a pair of so-called hollow vortices we are able to find a class of solution in closed mathematical form. Solutions for both a single vortex pair and a periodic array of vortex pairs will be presented. Connections with classical solutions due to both Michel (1890) and Pocklington (1895) will be made.

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