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**Flying in a superfluid: starting flow past an airfoil** SETH MUSSER, Massachusetts Institute of Technology, DAVIDE PROMENT, University of East Anglia, MIGUEL ONORATO, University of Turin, WILLIAM IRVINE, University of Chicago — We investigate the development of superfluid flow around an airfoil accelerated to a finite velocity from rest. Using both simulations of the Gross-Pitaevskii equation and analytical calculations we find striking similarities to viscous flows: from the production of starting vortices to the convergence of the airfoil circulation onto a quantized version of the classical Kutta-Joukowski circulation. Using a phenomenological argument we predict the number of vortices nucleated by a given foil and find good agreement with numerics. Finally we analyze the lift and drag acting on the airfoil.

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