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The flow around a flapping foil[1] FRANCISCO MANDUJANO, CARLOS MALAGA, Physics Department, School of Science, Universidad Nacional Autonoma de Mexico — The flow around a two-dimensional flapping foil immersed in a uniform stream is studied numerically using a Lattice-Boltzmann model, for Reynolds numbers between 100 and 250, and flapping Strouhal numbers between 0.01 and 0.6. The computation of the hydrodynamic force on the foil is related to the the wake structure. When the foil's is fixed in space, numerical results suggest a relation between drag coefficient behaviour and the flapping frequency which determines the transition from the von Kármán to the inverted von Kármán wake. When the foil is free of translational motion up-stream swimming at constant speed is observed at certain values of the flapping Strouhal.

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