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Separation of chiral objects by shear flow in microfluidic channels - Experiment MARCOS, Massachusetts Institute of Technology, HENRY FU, THOMAS POWERS, Brown University, ROMAN STOCKER, Massachusetts Institute of Technology — We use microfluidics to test the prediction that a helix in shear flow drifts across streamlines. We use the non-motile, helical-shaped bacterium Leptospira biflexa as our model chiral object. As the shear in the top and bottom halves of the microchannel has opposite sign, we predict and observe the bacteria in these two regions to drift in opposite directions. The magnitude of the separation is in good agreement with theory.

Roman Stocker
Massachusetts Institute of Technology

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