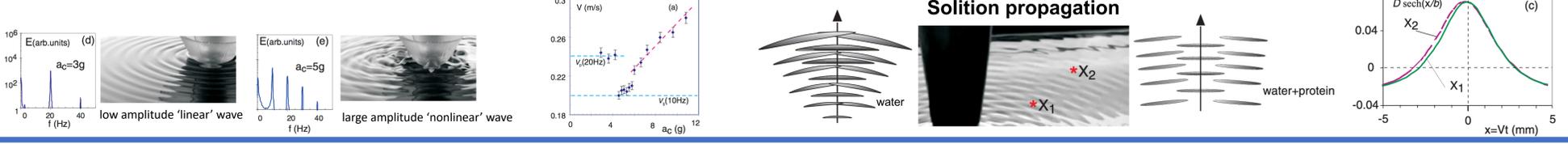


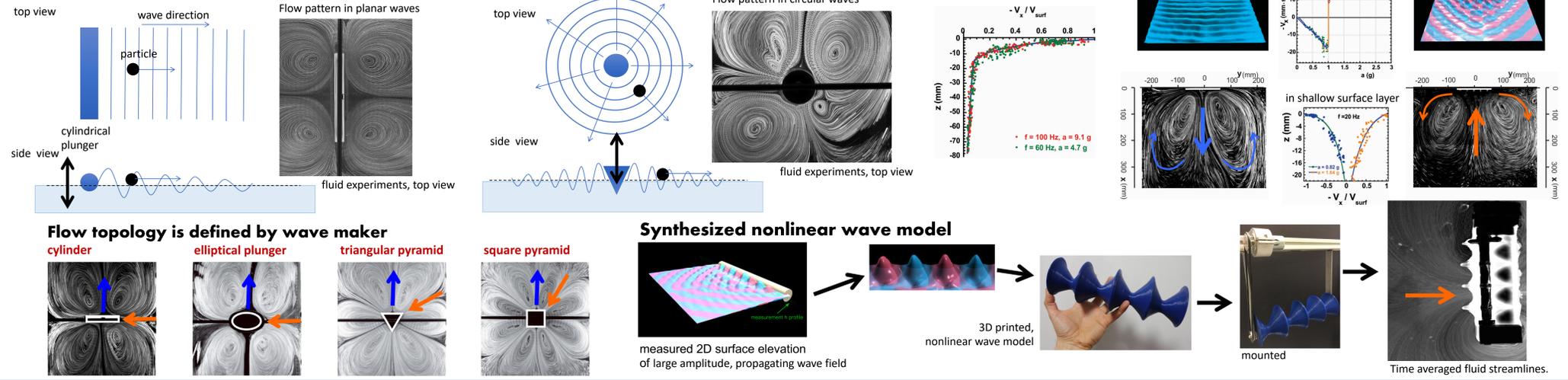
Cross-wave instability leads to propagating solitons

H. Xia and M. Shats; Propagating solitons generated by localized perturbations on the surface of deep water, *Phys. Rev. E* 85, 026313 (2012)



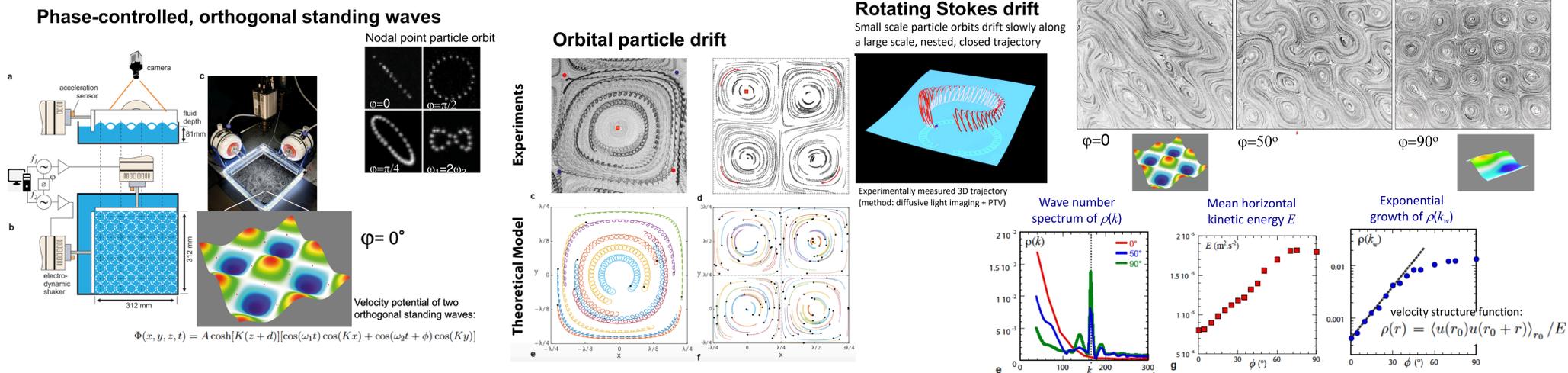
Cross-Wave instability leads to flow reversal

H. Punzmann, N. Francois, H. Xia, G. Falkovich and M. Shats; Generation and reversal of surface flows by propagating waves, *Nature Physics* 10, 658-663 (2014)



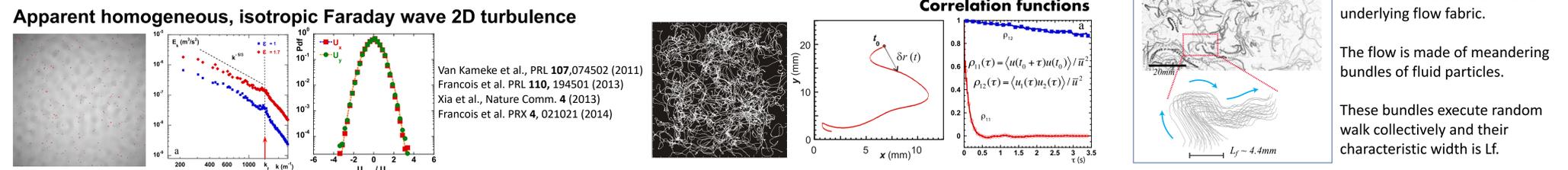
Liquid-interface metamaterial offers deterministic particle control

N. Francois, H. Xia, H. Punzmann, P.W. Fontana and M. Shats; Wave-based liquid-interface metamaterials, *Nature Communications* 7, 14325 (2017).



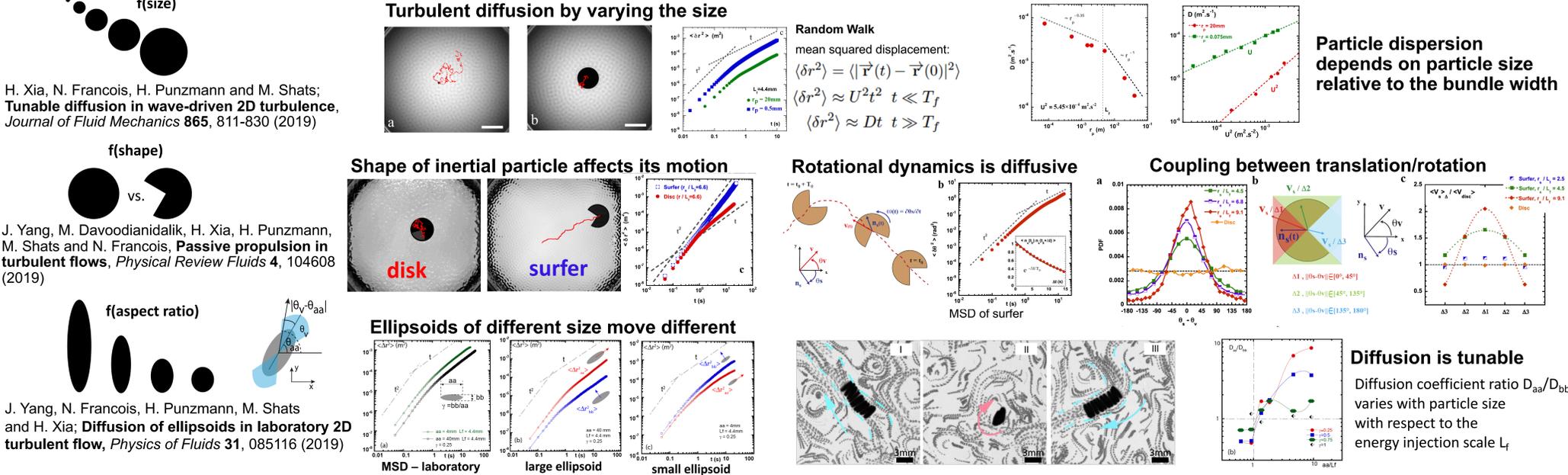
Existence of coherent structures in Faraday-wave 2D turbulence

N. Francois, H. Xia, H. Punzmann, B. Faber and M. Shats; Braid Entropy of Two-Dimensional Turbulence, *Scientific Reports* 5, 18564 (2015)



Diffusion control of inertial particles in Faraday-wave 2D turbulence

H. Xia, N. Francois, B. Faber, H. Punzmann, and M. Shats; Local anisotropy of laboratory two-dimensional turbulence affects pair dispersion, *Physics of Fluids* 31, 025111 (2019)



Rotor powered by 2D Faraday-wave turbulence

N. Francois, H. Xia, H. Punzmann, and M. Shats; Rectification of chaotic fluid motion in two-dimensional turbulence, *Physical Review Fluids* 3, 124602 (2018)

