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Exploring novel solitonic structures in two-component BECs[1] JIAJIA CHANG, CHRIS HAMNER, PETER ENGELS, Washington State University
— We experimentally study modulational instability (MI) in two distinguishable, miscible Bose-Einstein condensates (BECs). While MI is common in many immiscible nonlinear systems, its presence in our mixture is appealing in its ability to be controlled by counterflow. Confining MI to a local area of large counterflow enables the generation of solitons without the onset of global MI. We observe for the first time in matter-waves the formation of vector dark-dark solitons along with a variety of other solitons. Current and on going results will be discussed.

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