Finite time blow-up for a dyadic model of the Euler equations

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This talk will be about joint work with Nets Katz on dyadic models for the equations of fluid motion. We introduce a dyadic model for the Euler and the Navier-Stokes equations. The dyadic model possesses an important feature of the equations, which is conservation (or decay) of energy. For the dyadic Euler equations we prove finite time blow-up. In the context of the dyadic Navier-Stokes equations with hyper-dissipation we prove finite time blow-up in case when the dissipation degree is sufficiently small.