

DAMOP13-2013-000772

Abstract for an Invited Paper  
for the DAMOP13 Meeting of  
the American Physical Society

### **Quench dynamics in strongly correlated Bose-Hubbard chains**

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We present a series of experiments in the context of 1D physics with ultracold atoms, combining optical lattice potentials with the capability to tune the strength of the onsite particle interaction  $U$ . For an array of tilted 1D chains with site-to-site tilt  $E$  and initial unity occupation we record the dynamics after a quench to the phase transition point  $U \approx E$  by monitoring the number of doublons created as a function of time after the quench. We observe characteristic oscillations from which we deduce a shift of the resonance condition as time progresses. For  $U/2 \approx E$  and  $U/3 \approx E$  we observe coupling to next-nearest neighbors and beyond.