Abstract Submitted
for the DFD09 Meeting of
The American Physical Society

**Stability of liquid sheet edges** ROUSLAN KRECHETNIKOV, UCSB — Accelerating edges of thin liquid sheets are ubiquitous and are known to experience a longitudinal (along-the-edge) instability, which often leads to their break-up and atomization. The fundamental physical mechanisms of this instability are studied analytically in the form of a concise model. It is discovered that the classical Rayleigh-Taylor mechanism is substantially modified which leads to a stability picture different from that for flat interfaces, in part due to an interplay with Rayleigh-Plateau mechanisms. In particular, as the Bond number increases, first only one critical wave number is excited, but for higher values of the Bond number several critical wavenumbers can coexist with the same growth rates. This allows for the transition from the regular picture, in which one wavelength sets the pattern, to the frustrated picture, in which a few wavenumbers compete with each other.

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Date submitted: 06 Aug 2009 Electronic form version 1.4