

1106-VM-308

**Casey L Kelleher\*** (ckelleh@uci.edu), UCI Mathematics Department, 340 Rowland Hall (Bldg.# 400), University of California, Irvine, CA 92697-3875, and **Jeffrey D Streets**. *Entropies, Stability and Yang-Mills Flow*. Preliminary report.

Following Colding and Minicozzi's *Generic mean curvature flow I; generic singularities*, we define a notion of entropy for connections over  $\mathbb{R}^n$  which has shrinking Yang-Mills solitons as critical points. We compute the second variation of this entropy, which leads to a natural definition of stability for a shrinking soliton. As a consequence this discussion leads to a gap theorem for shrinkers. These results point to a broader strategy of studying "generic singularities" of Yang-Mills flow, and we discuss the differences in this strategy in dimension  $n = 4$  versus  $n \geq 5$ . We conclude with some discussion of open problems. (Received August 20, 2014)