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Norman, OK 73019, and **Huai-Dong Cao**. *Linear stability of gradient shrinking Ricci solitons.*

Shrinking Ricci solitons are self-similar solutions to Hamilton's Ricci flow and natural extensions of Einstein metrics of positive scalar curvature. They are also critical points of a certain functional defined by Perelman. In this talk we will discuss geometry of Ricci solitons, in particular the second variation of Perelman's shrinker entropy and stability question. We will present the full classification of the linear stability of Perelman's entropy on symmetric spaces of compact type. (Received September 09, 2013)