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Meng Zhu* (mez206@lehigh.edu), 14 E. Packer Ave., Department of Mathematics, Lehigh University, Bethlehem, PA 18015. *On linear stability of compact Ricci solitons*. Preliminary report.

In his celebrated work, G. Perelman discovered two important functionals, the \mathcal{F} and the \mathcal{W} functional, which are monotone along steady and shrinking Ricci solitons respectively. Later on, M. Feldman, T. Ilmanen and L. Ni introduced so called \mathcal{W}_+ functional which has similar monotonicity on expanding Ricci solitons. In this talk, we are going to present the second variations of these functionals and investigate the linear stability of compact Ricci flat, negative Einstein, and gradient shrinking Ricci solitons. (Received February 08, 2011)