1072-53-248 **Jeffrey S Case*** (jscase@math.princeton.edu), Fine Hall, Washington Road, Princeton, NJ 08544. *Conformal geometry and quasi-Einstein metrics.*

Quasi-Einstein metrics are a broad class of metrics which include Einstein metrics and gradient Ricci solitons. Except for gradient Ricci solitons, they can be naturally viewed as objects in conformal geometry. Moreover, many of the tools used to study gradient Ricci solitons can be realized from this conformal viewpoint. In this talk, we will describe how the conformal perspective yields an equivalence between quasi-Einstein metrics and sections of a certain vector bundle, and use this to draw some conclusions about such metrics. We will also use this to give a new heuristic for the study of gradient Ricci solitons. In particular, this will yield a necessary and sufficient condition for a suitably generic metric to be a gradient Ricci soliton. (Received June 29, 2011)