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Gideon Maschler* (gm@mathcs.emory.edu), Department of Mathematics & Computer Science, Emory University, Atlanta, GA 30322. *Special Kähler-Ricci potentials and Ricci solitons.*

Given a manifold of dimension at least six, we describe properties of the map of pairs $(g, \tau) \rightarrow (g/\tau^2, 1/\tau)$, with g a Riemannian metric and τ a smooth nonconstant function. Considering each pair on the complement of the zero set of τ , one observes that this map is an involution with an invariant subset consisting of pairs satisfying a *Ricci-Hessian equation*, the latter being a generalization of the Ricci soliton condition. Moreover, if g is Kähler, and locally Kähler-irreducible, while the image pair is a gradient Ricci-soliton, then this image pair is in fact a Kähler-Ricci soliton of a type first described by Koiso, while (g, τ) is a special Kähler-Ricci potential, a notion defined by Derdzinski and Maschler. (Received August 20, 2007)