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Andrzej Derdzinski* (andrzej@math.ohio-state.edu), Department of Mathematics, The Ohio State University, Columbus, OH 43210, and **Gideon Maschler**. *Pairs of Kähler surface metrics with a real-holomorphic gradient eigenvector*. Preliminary report.

We consider the case of two Kähler metrics g, h on a compact complex surface M with the property that some fixed nontrivial real-holomorphic vector field v is both a g -gradient and an h -gradient, while, at points where v is nonzero, v constitutes an eigenvector of h treated, with the aid of g , as a bundle endomorphism of TM . We then say that h arises from g by a v -biconformal change, and call the v -biconformal change trivial if h is a constant multiple of g . Various examples of nontrivial v -biconformal changes are presented, and the metrics involved include: all nonflat compact Kähler-Einstein metrics on compact complex surfaces admitting nontrivial holomorphic vector fields; all non-Einstein compact Kähler-Ricci solitons in complex dimension 2; and the Chen-LeBrun-Weber conformally-Einstein metric on the two-point blow-up of the complex projective plane with the v -biconformal change found by LeBrun in 1995. (Received September 01, 2009)