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David T Gay* (d.gay@euclidlab.org) and **Robion Kirby**, Select One. *Morse 2-functions on 4-manifolds.*

A Morse 2-function is a generic smooth map to a smooth 2-manifold, with a 1-dimensional singular locus and a short list of local models, as an obvious generalization of a usual Morse function. I will discuss existence and uniqueness results for Morse 2-functions on 4-manifolds and focus on the extent to which these results can be “combinatorialized”, in analogy with the combinatorialization of Morse and Cerf theory to handle decompositions and handle moves. (Received June 28, 2011)