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Andrew Lorent* (lorentaw@uc.edu), 2600 Clifton Ave., Cincinnati, OH 45221. *Multiwell
Liouville Theorems and pairs of functions whose symmetric part of gradient are close.*

A corollary to Liouville's theorem is that if a Sobolev mapping u satisfies $Du \in SO(n)$ a.e. then u is affine. Following the optimal quantitative generalization of this corollary by Friesecke, James, Müller there have been many developments establishing quantitative analogues of well known theorems in elasticity and quasiconformal analysis. We survey these developments focusing on generalizations of F-J-M theorem to multi-wells and to rigidity of pairs of functions whose symmetric part of gradient are close. (Received June 23, 2011)