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Liping Liu* (liulipinig@uh.edu), 4800 Calhoun Road, Engr. Bldg 1, Houston, TX 77030. *New optimal bounds for two-phase non-well-ordered composites.*

In this paper we define and calculate the moment tensors for inhomogeneous media. Using the comparison theorem we then derive bounds on the energy induced by the inhomogeneities. In particular, when specified to two-phase composites, we recover the classic Hashin-Shtrikman's bounds for well-ordered materials and obtain new bounds for non-well-ordered materials. (Received September 02, 2010)