Turkish Journal of Physics

Turkish Journal

of

Physics

The Renormalization-Group Microscope: The Local Statistical Mechanics of Heterogeneous Systems

Dicle YEŞİLLETEN
Department of Physics, Massachusetts Institute of Technology
Cambridge, Massachusetts 02139, USA
A. Nihat BERKER
Department of Physics, Massachusetts Institute of Technology
Cambridge, Massachusetts 02139, USA
Department of Physics, İstanbul Technical University
80626 Maslak, İstanbul-TURKEY

Keywords
Authors

Abstract: Renormalization-group theory is developed to yield all local microscopic thermodynamic densities in heterogeneous systems. Local energy densities and local magnetizations are thus obtained for random-bond systems, random-field systems, and spin-glasses, in two and three dimensions. Different order-disorder mechanisms in these diverse systems, such as chaotic ordering and domain-wall melting, become quantitatively evident.

Turk. J. Phys., **23**, (1999), 77-88.
Full text: pdf
Other articles published in the same issue: Turk. J. Phys.,vol.23,iss.1.

phys@tubitak.gov.tr

Scientific Journals Home Page