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Abstracts of Short Communications and Posters

Section:

15. Numerical Analysis and Scientific Computing

1991 MS Classification: 65, 35, 92
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Energy functions on graphs, wavelets, and multilevel algorithms

We formulate hierarchical approaches to minimize certain quadratic energy functionals on Hilbert spaces of functions on graphs. This leads to wavelet type bases and multilevel algorithms for solving elliptic boundary value problems, interpolating from scattered data, and computing deformations of tensegrity structures such as protein molecules and cytoskeletans.