Adaptive approximation of nonlinear operators

A multiresolution transform corresponding to interpolatory technique is used for fast application of second order Taylor's approximations. In designing this algorithm we apply data compression to the linear and the bilinear forms that appear on the approximation. Analysis of the error is performed. Finally, some numerical results are presented.

Key Words. Multiresolution, compression, nonlinear operators, Taylor's approximation.

AMS(MOS) subject classifications. 42C10, 47H17, 65J15, 65T99