Convergent Two-Scale Methods for the Normalized Infinity Laplacian

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We propose a monotone, and consistent numerical scheme for the approximation of the Dirichlet problem for the normalized Infinity Laplacian, which could be related to the family of so–called two–scale methods. We show that this method is convergent, and prove rates of convergence. These rates depend not only on the regularity of the solution, but also on whether or not the right hand side vanishes. Some extensions to this approach, like obstacle problems and symmetric Finsler norms are also considered.

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