

A priori error estimates for finite element discretization of semilinear elliptic equations with non-Lipschitz nonlinearities

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In this talk we discuss the finite element discretization of semilinear elliptic equations with nonlinearities, which are only assumed to be monotonically non-decreasing and continuous. This means, that non-differential, non-Lipschitz and even non-Hölder continuous nonlinearities are allowed. For a large class of such equations (posed on a polygonal/polyhedral and convex domain) we provide a priori error estimates for a direct finite element discretization (without any regularization).

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