

On the regularity theory for mixed local and nonlocal quasilinear parabolic equations

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Abstract. We consider mixed local and nonlocal quasilinear parabolic equations of p -Laplace type and discuss several regularity properties of weak solutions for such equations. More precisely, we establish local boundedness of weak subsolutions, lower semicontinuity of weak supersolutions as well as upper semicontinuity of weak subsolutions. We also discuss the pointwise behavior of the semicontinuous representatives. Our main results are valid for sign-changing solutions. Our approach is purely analytic and is based on energy estimates and the De Giorgi theory.

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