HÖLDER REGULARITY FOR SINGULAR PARABOLIC SYSTEMS OF p-LAPLACIAN TYPE

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Abstract :

We study the regularity for nonlinear parabolic systems of *p*-Laplacian type, in the singular case $2m/(m+2) < p < 2$. We show an optimal condition on given external forces for a local Hölder continuity. Actually our main result recovers the classical one for linear equations. The proof is based on Campanato's direct approach with the intrinsic scaling to the evolutionary *p*-Laplace operator. The iteration scheme is performed similarly as in Misawa[1], however, with some technical care peculiar to the singular case.

References :

1. M. Misawa, *A Hölder estimate for nonlinear parabolic systems of p-Laplacian type*, J. Differential Equations, 254 (2013), 847-878.