

Local behavior of solutions to anisotropically weighted quasilinear degenerate parabolic equations

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Abstract. This paper aims to study the local behavior of solutions to quasilinear degenerate parabolic equations with a class of anisotropic weights, which comprise two power-type weights of different dimensions. We first capture the asymptotic behavior of the solution near the singular or degenerate point of the weights. In particular, we find an explicit upper bound on the decay-rate exponent determined by the structures of the equations and weights. The exponent can attain this upper bound under certain conditions and reflects the damage effect of the weights on the regularity of the solution. Furthermore, we prove the local Hölder regularity of solutions to non-homogeneous parabolic p -Laplace equations with single power-type weights.

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