The Cauchy problem for doubly degenerate parabolic equations with weights

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We consider the Cauchy problem in the Euclidean space for a doubly degenerate parabolic equation with space-dependent exponential weights. We assume here that the solutions of the Cauchy problem to be globally integrable in space in appropriate weighted sense. Under suitable assumptions, we prove for the solutions sup estimates, i.e., the decay rate at infinity, the property of finite speed of propagation, and support estimates. All our estimates are given explicitly in terms of the weight appearing in the equation.

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