

Tangential gradient in a sub-gradient diffusion equation

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We study stationary equation governed by the operator $-\nabla \cdot A(x, \nabla u) = \mu$ in the case where $A(x, \xi)$ is a maximal monotone graph and μ is a Radon measure. Our main interest concerns the typical situation where $A(x, \cdot)$ is defined only in a bounded region of \mathbf{R}^n ; so that $A(x, \cdot)$ does not satisfies the standard polynomial growth control condition. The natural energy space in this case is the space of Lipschitz continuous function and the flux is a vector valued measure. We using tangential gradient with respect to a Radon measure to pass through this difficulty.

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