

Blow-up of the critical norm for a supercritical semilinear heat equation

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We consider the scaling critical Lebesgue norm of blow-up solutions to the semilinear heat equation with power nonlinearity in an arbitrary smooth domain of \mathbb{R}^n . In the Sobolev supercritical range, we show that the critical norm must be unbounded near the blow-up time. The range is optimal in view of the existence of blow-up solutions with bounded critical norm for the Sobolev critical case. This talk is based on a joint work with Jin Takahashi (Tokyo institute of technology).