Critical Fujita curve for a semilinear parabolic system with time-weighted sources *

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Abstract. This paper studies the Fujita phenomena for the Cauchy problem of a semilinear parabolic system coupled via the time-weighted sources $f_1(t)u^p, f_2(t)v^q$. The critical curve is determined for a wider range of parameters, where $p, q \geq 0$ with $pq > 1$. In particular, the decay cases of $f_1(t)$ and $f_2(t)$ are also included.

Keywords: Fujita phenomenon, critical curve, global solution, non-global solution, time-weighted sources, semilinear parabolic system

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