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Patcharin Tragoonsirisak* (pxt6365@louisiana.edu), Department of Mathematics, University of Louisiana at Lafayette, Lafayette, LA 70504-1010. *Quenching phenomena due to a concentrated nonlinear source in \mathbb{R}^N .*

This article studies a semilinear parabolic Cauchy problem with a concentrated nonlinear source on the surface of a N -dimensional ball. It is shown that the solution always quenches for $N \leq 2$, and quenching can be prevented for $N \geq 3$. The influence of the source strength on quenching phenomena is discussed. (Received September 01, 2008)