

**SINGULARITY ANALYSIS OF A REACTION-DIFFUSION  
EQUATION WITH A SOLUTION-DEPENDENT DIRAC DELTA  
SOURCE**

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**Abstract**

We analyze the existence and singularity of solution to a reaction-diffusion equation, whose reaction term is represented by a Dirac delta function which depends on the solution itself. We prove that there exists a unique analytic solution with a logarithmic singularity at the origin.