1104-35-25 **Attou A. Miloua***, 4209 Haldane Street, Pittsburgh, PA 15207. *Point rupture solutions of singular elliptic equations in N-D.*

We consider the elliptic equation

$$\Delta u = f(u)$$

in a region $\Omega \subset \mathbb{R}^N,\ N \geq 3$, where f is a positive continuous and satisfying

$$\lim_{u \to 0^+} f(u) = \infty.$$

Motivated by the thin film equations, a solution u is said to be a point rupture solution if for some $p \in \Omega$, $u(p) = 0$ and $u(p) > 0$ in $\Omega \backslash \{p\}$. Our main result is a sufficient condition on f for the existence of radial point rupture solutions. Furthermore, we will prove that our results can be applied to the point rupture solutions for a class of quasi-linear elliptic equations of the form

$$\operatorname{div}(a(u)\Delta u) = \frac{a'(u)}{2}|\nabla u|^2 + f(u) \tag{1}$$

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