Mathematics > Analysis of PDEs

The Glassey conjecture with radially symmetric data

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In this paper, we verify the Glassey conjecture in the radial case for all spatial dimensions, which states that, for the nonlinear wave equations of the form $\Box u=|\nabla u|^p$, the critical exponent to admit global small solutions is given by $p_c=1+\frac{2}{n-1}$. Moreover, we are able to prove the existence results with low regularity assumption on the initial data and extend the solutions to the sharp lifespan. The main idea is to exploit the trace estimates and KSS type estimates.

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