

Blow-up solutions of nonlinear elliptic equations in \mathbf{R}^n with the
critical Sobolev exponent

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Abstract: Consider the equation $\Delta u + Ku^{\frac{n+2}{n-2}} = 0$ in $\mathbf{R}^n \setminus \{0\}$. We discuss recent construction of blow-up solutions of the equation with K being surprisingly regular at 0. The presentation also explains how the key features of the construction resound in blow-up analysis of the Nirenberg-Kazdan-Warner equation on prescribing scalar curvature in S^n .