

Gluing metrics with prescribed Q -curvature and different asymptotic behaviour in high dimension

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Abstract. We show a new example of blow-up behaviour for the prescribed Q -curvature equation in even dimension 6 and higher, namely given a sequence $(V_k) \subset C^0(\mathbb{R}^{2n})$ suitably converging we construct for $n \geq 3$ a sequence (u_k) of radially symmetric solutions to the equation

$$(-\Delta)^n u_k = V_k e^{2nu_k} \quad \text{in } \mathbb{R}^{2n},$$

with u_k blowing up at the origin *and* on a sphere. We also prove sharp blow-up estimates. This is in sharp contrast with the 4-dimensional case studied by F. Robert (J. Differential Equation, 2006).

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