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Abstracts of Short Communications and Posters

Section:

10. Partial Differential Equations

1991 MS Classification: 35
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High Order Conformally Invariant Equations
We consider the existence and classification of solutions of higher order conformally invariant equation in R^n

$$(-\Delta)^{\frac{n}{2}} u = (n-1)! e^{nu}$$

with

$$\int_{R^n} e^{nu} dx < \infty.$$

Let $\alpha = \frac{2}{|S^n|} \int e^{nu} dx$. We show that
(a) $\alpha \leq 2$;
(b) if $\alpha = 2$, all the solutions are radially symmetric;
(c) for every $0 < \alpha \leq 2$, there exists at least one solution.