A Liouville type theorem for some conformally invariant fully nonlinear equations

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January 23, 2008

Obata and Gidas-Ni-Nirenberg classified all the positive C^2 solutions of the Yamabe equation $-\Delta u = c(n)u^{(n+2)/(n-2)}$ on R^n $(n > 2)$ under the assumption of finite volume. Caffarelli-Gidas-Spruck removed the assumption. In our talk, we will consider a fully nonlinear Yamabe equation $\sigma_k(A_g)$ on R^n and classify all the positive solutions, where σ_k is the kth fundamental symmetric function and A_g is the Schouten tensor of the metric $u^{4/(n-2)}(dx_1^2 + ... + dx_n^2)$. The classification of solutions is related to obtain the compactness results of the corresponding geometric problem.

The talk will be in Vincent Hall 570 at 3:35 pm