1107-58-339 **Jungang Li*** (f16532@wayne.edu), Wayne State University, Detroit, MI 48201, and **Guozhen Lu**. *Sharp Moser-Trudinger Inequality on Complete Noncompact Riemannian Manifolds.*

We will consider the sharp Moser-Trudinger inequality on complete noncompact Riemannian manifolds. Namely,

$$\sup_{u\in W^{1,n}(M),||u||_{1,\tau}\leq 1}\int_M \phi(\alpha_n|u|^{\frac{n}{n-1}})dV_g \leq C(n,\tau) \tag{1}$$

Where $\phi(t)=\sum_{k=n-1}^{\infty}\frac{t^k}{k!}$, $\alpha_n = n\omega_{n-1}^{\frac{1}{n-1}}$, where ω_{n-1} is the area of the unit sphere in R^n, $||u||_{1,\tau}=(\int_M \tau|u|^n+|\nabla u|^n)^{\frac{1}{n}}$. The inequality is sharp in the sense that for $\alpha>\alpha_n$, the above inequality fails. (Received January 18, 2015)