1060-35-153   **Szu-yu Sophie Chen*** (`sophie@math.ias.edu`), Einstein Drive, Princeton, NJ 08540. *Optimal curvature decays on asymptotically locally Euclidean manifolds.*

We present a method in nonlinear elliptic systems to study curvature decays on asymptotically locally Euclidean (ALE) manifolds. In particular, we obtain that scalar flat Kahler ALE metrics of real dimension n are of order $n-2$. This decay is optimal and is realized on complex line bundles over $CP^{\frac{n}{2}-1}$. (Received March 29, 2010)