962-55-1369 **Scott J. Simmons** (simmons@tamiu.edu). *Rigidity of Elliptic Genera on Homogeneous Spaces.* Preliminary report.

Given a closed oriented manifold M and a compact Lie group G acting smoothly on M, one has Ochanine's invariant, the elliptic genus $\phi_G(M) \in R(G)$ taking values in the representation ring of G. If M admits a spin structure, then $\phi(M)$ is constant with respect to G. This property, called rigidity, characterizes the elliptic genus. We give a geometric proof of rigidity in special cases when M is a homogeneous space. If $M = G/H$, the proof comprises a representation theoretic argument which exhibits the dependence of the genus on the geometry of the root system of H in G. (Received October 03, 2000)