

Meeting: 1003, Atlanta, Georgia, SS 11A, AMS Special Session on Riemannian Geometry, I

1003-53-1064 **Brian M Loft*** (loft@shsu.edu), Dept. of Mathematics, Huntsville, TX 77341-2206. *Connected components of the space of positive scalar curvature metrics on spheres - concordance vs. cobordism.* Preliminary report.

In 1988 B. Hajduk demonstrated an isomorphism between the concordance group Π_n of positive scalar curvature metrics on the n -sphere and the relative spin cobordism group R_{n+1}^{spin} of $(n + 1)$ -manifolds whose boundary admits a metric of positive scalar curvature. We extend these results to the category of \mathbb{Z}/k -manifolds as well as the equivariant spin cobordism groups, using the Surgery Lemma of Gromov-Lawson (and Schoen-Yau). We use these results to find new path components in the space of positive scalar curvature metrics on spheres in dimensions $8k$ and $8k + 1$. (Received October 03, 2004)