1025-57-210   **Boris I Botvinnik*** (`botvinn@math.uoregon.edu`), Department of Mathematics, University of Oregon, Eugene, OR 97402. *Rational homotopy groups of the moduli space of metrics of positive scalar curvature.* Preliminary report.

The problem of determining when a smooth compact manifold admits a positive-scalar-curvature (psc) Riemannian metric is comparatively well understood. However, even for the n-sphere, surprisingly little work has been done to date concerning the topological stucture of the moduli space of all psc metrics modulo diffeomorphisms. In this talk, I will present some new results concerning the rational homotopy groups of this space for the n-sphere with n>4. My approach uses results on higher analytical/topological torsion due to Hatcher, Igusa, and Goethe. (Received January 23, 2007)