1089-58-54 **Zhizhang Xie*** (zhizhang.xie@vanderbilt.edu), Math Department, Vanderbilt University, 1326 Stevenson Center, Nashville, TN 37240, and **Guoliang Yu**. *Positive scalar curvature, higher rho invariants and localization algebras.*

In our recent paper, we used localization algebras to study the higher rho invariant for closed spin manifolds with positive scalar curvature metric. The higher rho invariant is a secondary invariant and is closely related to the positive scalar curvature problems. The main result of the paper connects the higher index of the Dirac operator on a spin manifold with boundary to the higher rho invariant of the Dirac operator on the boundary, where the boundary is endowed with a positive scalar curvature metric. As an application, we obtain a homomorphism from the stolz's positive scalar curvature exact sequence to the exact sequence of Higson and Roe, in all dimensions. (Received January 24, 2013)