Chen-Yun Lin* (cylin@math.columbia.edu), Mathematics Department, Columbia University, RM 408, MC 4406, 2990 Broadway, New York, NY 10027. On Hamilton’s Ricci flow and Bartnik’s construction of metrics of prescribed scalar curvature.

It is known by work of R. Hamilton and B. Chow that the evolution under Ricci flow of an arbitrary initial metric \( g_0 \) on \( S^2 \), suitably normalized, exists for all time and converges to the round metric. In this talk, we describe a construction for metrics of prescribed scalar curvature using solutions to the Ricci flow. The problem is converted into a semilinear parabolic equation similar to the quasispherical construction of Bartnik. We obtain existence results for this equation and discuss applications of the metrics. (Received September 01, 2009)