1056-83-349   **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)