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Artem Pulemotov* (artem@math.uchicago.edu), Department of Mathematics, The University of Chicago, 5734 S. University Avenue, Chicago, IL 60637. *Parabolic equations and the Ricci flow on manifolds with boundary.*

In the first part of the talk, we will focus on a second-order quasilinear parabolic equation in a vector bundle over a compact manifold M with boundary. Our goal is to formulate a short-time existence theorem for this equation. In the second part, we will discuss the Ricci flow on M . The objective is to propose new boundary conditions for the flow and state a series of short-time existence results. (Received August 04, 2010)