Steve Hofmann* (hofmanns@missouri.edu). A criterion for quantitative absolute continuity of caloric measure.

We show that for a domain Ω in space-time \( \mathbb{R}^{n+1} \), quantitative, scale-invariant absolute continuity of caloric measure (more precisely, the weak-\( A_\infty \) property), with respect to a natural version of “surface” measure on the “quasi-lateral essential boundary” (a subset of the parabolic boundary which is simply the usual lateral boundary for cylinders and \( \text{Lip}(1,1/2) \) domains), is equivalent to the solvability of a suitable version of the initial-Dirichlet problem with lateral (more precisely “quasi-lateral”) data in some \( L^p \) space, \( p < \infty \). In addition, we prove a criterion for the weak-\( A_\infty \) property to hold, extending elliptic results of Bennewitz and Lewis to the parabolic setting. This is joint work with A. Genschaw. (Received February 03, 2019)