

Gibbs measures for CAT(-1) spaces - a geometric approach that survives branching

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CAT(-1) spaces are a far-reaching generalization of Riemannian manifolds. We discuss recent developments in the ergodic theory of this setting. There is a natural geodesic flow to study. We construct a Gibbs measure for any bounded Hölder potential on the space of geodesics, and show that when it is finite it is the unique equilibrium state for the system. Unlike previous results in this direction in the CAT(-1) setting, our construction does not require a condition that the potential must agree over geodesics that share a common segment, which is a restrictive condition beyond the Riemannian case. To fully allow branching, much of our construction takes a “quasi” approach which allows “wiggle” by appropriate constants.

(joint work with Caleb Dilsavor (Ohio State))