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*Thermodynamic formalism for non-compact systems and application to geodesic flow on
geometrically finite CAT(-1) spaces.*

We extend Bowen's specification-based results on uniqueness of equilibrium states to a wide class of non-compact systems. Our goal for this work is to establish a general framework for thermodynamic formalism for dynamical systems in the non-compact setting. We define a suitable notion of specification in this setting, which gives uniform transition times for orbit segments which start and end in a compact set (with the transition time allowed to be larger if the compact set is larger). The key point is a Strong Positive Recurrence (SPR) assumption defined at this level of generality. As an application, we establish uniqueness of equilibrium states for SPR potentials for geodesic flow on geometrically finite CAT(-1) spaces. (Received January 21, 2022)