

**”Gradient flows, heat equation, and Brownian motion on
time-dependent metric measure spaces”**

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Abstract: We study the heat equation on time-dependent metric measure spaces (being a dynamic forward gradient flow for the energy) and its dual (being a dynamic backward gradient flow for the Boltzmann entropy). Monotonicity estimates for transportation distances and for squared gradients will be shown to be equivalent to the so-called dynamical convexity of the Boltzmann entropy on the Wasserstein space.