On the speed in transportation costs of heat distributions

Kazumasa Kuwada (Tokyo Tech)

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By regarding heat distributions as a curve in the space of probability measures, we can consider its speed measured by some transportation costs. Our main concern in this talk is heat distributions on (backward) Ricci flow. The speed can be expressed explicitly when heat distribution is identified with a gradient flow of the relative entropy. On Ricci flow, this interpretation does not seem to work well. Nevertheless we can show some results for a suitably chosen transportation costs. By combining this result with monotonicity of those transportation costs, we can show the monotonicity of Perelmans F-functional as well as W-entropy. Indeed it extends some known results on Ricci flow to noncompact case.