

Department of Applied Mathematics and Statistics
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SEMINAR

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DIFFUSION KERNELS ON GRAPHS

ABSTRACT

The heat equation is a partial differential equation which describes the variation of temperature in a given region over time subject to boundary conditions. We will define a related equation that we will also call a heat equation in the situation where the space variable lives on the vertices of a graph. We will review examples of graphs where the heat equation can be solved analytically. We will then discuss applications in language modeling and in image processing where solving the heat equation on a well-chosen graph can lead to interesting smoothing and denoising algorithms.

Little mathematical background is required for understanding this lecture.