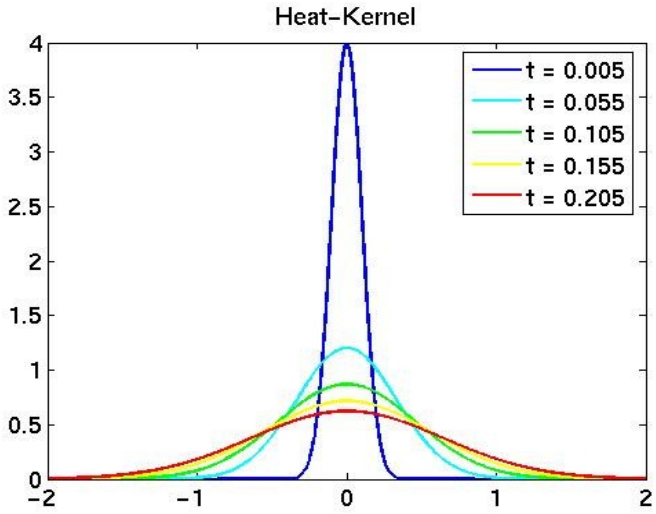
The SUMO Speaker Series for Undergraduates

(Pizza Provided)
Wednesday, April 27th
4:15-5:05, room 380C

Heat Trace Asymptotics

Jesse Gell-Redman



ABSTRACT:

On a compact, smoothly bounded planar domain, the way that an initial temperature function disperses with time, say with respect to the condition that it be zero on the boundary, is succinctly contained in the data of an integral kernel, called the *fundamental solution* to the heat equation. For each time, *t*, in (almost) the same way that matrices have traces, this kernel has a trace, and as *t* goes to zero the trace admits an asymptotic expansion whose coefficients have wide ranging applications. In this talk we will discuss their construction, their structure (though no general formula exists), and some applications to spectral and (if time permits) index theory.

I will not assume specialized knowledge of PDE's, and all mathy undergraduates are encouraged to attend.

sumo.stanford.edu/speakers