

1145-46-719

**Aqeeb A Sabree\*** (aqeeb-sabree@uiowa.edu), 14 MacLean Hall, Iowa City, IA 52246.

*Factorizations of Positive Definite Kernels.*

From the Moore-Aronszajn theorem, we have an explicit correspondence between reproducing kernel Hilbert spaces (RKHS) and reproducing kernel functions—also called positive definite kernels or positive definite functions. This presentation will focus on the duality between positive definite functions and their boundary spaces. We will define these notions and cover a brief overview of the subject area. A major focus of this presentation will be placed on the idea of reproducing positive definite kernels with boundary functions. It is known that every reproducing kernel Hilbert space has an associated generalized boundary probability space. We will investigate this concept with different examples and aspects of my dissertation. These RKHSs have numerous applications to areas such as complex analysis, harmonic analysis, stochastic analysis, information theory, and machine learning. (Received September 13, 2018)