1108-60-163   **Chunfeng Huang*** (`huang48@indiana.edu`), 309 North Park Ave., Bloomington, IN 47401, and **Haimeng Zhang** and **Scott M Robeson**. *Intrinsic Random Functions and Universal Kriging on the Circle.* Preliminary report.

Intrinsic random functions (IRF) provide a versatile approach when the assumption of second-order stationarity is not met. Here, we develop the IRF theory on the circle with its universal kriging application. Unlike IRF in Euclidean spaces, where differential operations are used to achieve stationarity, our result shows that low-frequency truncation of the Fourier series representation of the IRF is required for such processes on the circle. All of these features and developments are presented through the theory of reproducing kernel Hilbert space. In addition, the connection between kriging and splines is also established, demonstrating their equivalence on the circle. (Received January 09, 2015)