1142-35-169   **Jabar Salih Hassan*** (`jshm97@mst.edu`), 12890 CR 5030 APT 1, Rolla, MO 65401, and **David E Grow**. *Reproducing kernel Hilbert spaces on a semi-infinite domain.*

In this talk we introduce new reproducing kernel Hilbert spaces on a semi-infinite domain and demonstrate existence and uniqueness of solutions to the non-homogeneous telegraph equation in these spaces if the driver is square integrable and sufficiently smooth. These spaces are reasonable for applications and convenient for numerical approximation because the kernels are piecewise polynomial functions. (Received September 02, 2018)