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New RKHSs on a semi-infinite domain with existence and uniqueness results for the non-homogeneous telegraph equation

In this talk we introduce new reproducing kernel Hilbert spaces (RKHSs) on a semi-infinite domain and demonstrate existence and uniqueness of solutions to a certain type of non-homogeneous hyperbolic partial differential 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 piece-wise polynomial functions.