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M. Zuhair Nashed* (nashed@math.udel.edu). *Sampling Expansions in Unitarily Translation Invariant Reproducing Kernel and Sobolev Spaces.*

Sufficient conditions are established in order that, for a fixed countably infinite set of points on the full line or the half-line, a function on a suitable unitarily translation invariant reproducing kernel space can be reconstructed from its samples via a sampling expansion theorem. A number of examples, including Sobolev spaces, of such reproducing kernel spaces and the corresponding sampling expansions are given. We indicate applications of these results (and their extensions to multidimensional signals) to signal and image analysis. This is joint work with Cornelis V. M. van der Mee and Sebastiano Seatzu of the University of Cagliari, Italy. (Received October 02, 2000)