1126-41-156   **Keaton Hamm*** (`keaton.hamm@vanderbilt.edu`). *Radial Basis Functions in Sampling Theory.*
We will discuss some analogues of results in classical and modern sampling theory which use the theory of radial basis function interpolation. In particular, we will discuss the use of shift-invariant, and more generally quasi shift-invariant spaces associated with radial basis functions and their role in the sampling methods. These spaces take the form $V_p(\phi, \mathcal{X}) := \{\sum_{j \in \mathbb{Z}} a_j \phi(\cdot - x_j) : a \in \ell_p\}$. Of interest to us are finding what spaces of target signals can be well-approximated by functions in these quasi shift-invariant spaces, and determining how the radial basis kernel ϕ and the sampling set $\mathcal{X}$ impact the approximation orders of the underlying sampling scheme. (Received January 10, 2017)

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