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Alejandro Chavez-Dominguez, Daniel Freeman* (daniel.freeman@slu.edu) and **Keri Kornelson**. *Finite unit norm tight frames and the frame potential in Banach spaces.*

We define a frame potential for frames in a finite dimensional Banach space. As is the case for frames in Hilbert spaces, we prove that the frame potential can be used to characterize finite unit norm tight frames (FUNTFs) for finite dimensional Banach spaces. That is, a frame of k vectors in an n -dimensional Banach space is a FUNTF if and only if its frame potential is k^2/n .

We prove the existence of FUNTFs for a variety of spaces, and in particular that every n -dimensional complex Banach space with a 1-unconditional basis has a FUNTF of k vectors for every $k \geq n$. However, many interesting results on FUNTFs and sums of rank one projections for Hilbert spaces remain unknown for Banach spaces and we pose multiple open questions. (Received February 04, 2018)