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**Akram Aldroubi\*** (akram.aldroubi@vanderbilt.edu), Dept Math. SC 1520, Nashville, TN 37240, and **Ilya Krishtal**. *Slanted matrices, Banach frames and sampling*.

We present a rare combination of abstract results on the spectral properties of slanted matrices and some of their very specific applications to frame theory and sampling problems. We show that for a large class of slanted matrices boundedness below of the corresponding operator in  $l_p$  for some  $p$  implies boundedness below in  $l_p$  for all  $p$ . We use the established result to enrich our understanding of Banach frames and obtain new results for irregular sampling problems. We also present a version of a non-commutative Wiener's lemma for slanted matrices. (Received February 06, 2010)