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Bownik, University of Oregon, Eugene, OR 97403, M. Jakobsen, Technical University of Denmark, Lyngby, Denmark, and J. Lemvig, Technical University of Denmark, Lyngby, Denmark. On Wilson bases in L<sup>2</sup>(R<sup>d</sup>).

It is known that starting from a tight Gabor frame for  $L^2(\mathbb{R})$  with redundancy 2, one can construct an orthonormal Wilson basis for  $L^2(\mathbb{R})$  whose generator is well-localized in the time-frequency plane. But it remains unknown whether such construction can be done if the initial tight Gabor frame has a redundancy different from 2. In this talk, we show that one can construct multi-dimensional orthonormal Wilson bases starting from tight Gabor frames of redundancy  $2^k$ where  $k = 1, 2, \ldots, d$ . These results generalize most of the known results about the existence of orthonormal Wilson bases. The talk is based on a joint work with M. Bownik, M. Jokobsen, and J. Lemvig. (Received January 14, 2017)