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**Martin Ehler\*** (ehlermar@mail.nih.gov), Section on Medical Biophysics, NICHD, NIH, 9 Memorial Drive, Bethesda, MD 20892, and **Bin Han** (bhan@math.ualberta.ca), Dept. of Math and Stat Sciences, University of Alberta, Edmonton, T6G 2G1. *Wavelet bi-frames with few generators from multivariate refinable functions.*

Using results on syzygy modules over a multivariate polynomial ring, we are able to construct compactly supported wavelet bi-frames with few generators from almost any pair of compactly supported multivariate refinable functions. In our examples, we focus on wavelet bi-frames whose primal and dual wavelets are both derived from one box spline function. Our wavelet bi-frames have fewer generators than comparable constructions available in the literature. (Received May 07, 2008)