1113-42-10 **Angel San Antolín** and **Richard A Zalik*** (zalikri@auburn.edu). *Some smooth compactly supported tight wavelet frames with vanishing moments.*

Let $A \in \mathbb{R}^{d\times d}$, $d \geq 1$ be a dilation matrix with integral entries and $|\det A| = 2$. We construct several families of compactly supported Parseval framelets associated to A having any desired number of vanishing moments. The first family has a single generator and its construction is based on refinable functions associated to Daubechies low pass filters and a theorem of Bownik. For the construction of the second family we adapt methods employed by Chui He and Petukhov for dyadic dilations to any dilation matrix A. The third family has the additional property that we can find members of that family having any desired degree of regularity. Its construction involves some compactly supported refinable functions, the Oblique Extension Principle and a slight generalization of a theorem of Lai and Stöckler. (Received February 19, 2015)