

1106-VO-1009 **Somantika Datta** and **Jesse Ernest Oldroyd*** (jesseo@uidaho.edu), Moscow, ID 83844. *A New Construction of Tight Frames Using Orthogonal Vectors.*

Consider a collection of N unit vectors $\{f_1, \dots, f_N\}$ in \mathbb{C}^d . This set is called an equiangular tight frame (ETF) if the cross-correlation between any two distinct vectors has the same modulus that is given by the Welch bound. ETFs have many properties useful for signal processing and other areas and so their construction has become an important problem in applied harmonic analysis. Unfortunately, ETFs do not always exist for all choices of N and d ; therefore it is useful to determine tight frames with a restricted number of distinct cross-correlations. The main focus of this talk is a method to construct such tight frames for all choices of N and d . (Received September 09, 2014)