

# A UNIFIED APPROACH TO FOURIER-CLIFFORD-PROMETHEUS SEQUENCES, TRANSFORMS AND FILTER BANKS

Ekaterina L.-Rundblad, Valeriy Labunets, and Ilya Nikitin  
*Ural State Technical University*  
*Ekaterinburg, Russia*  
lab@rtf.ustu.ru

**Abstract** In this paper we develop a new unified approach to the so-called generalized *Fourier-Clifford-Prometheus sequences, transforms* (FCPTs) and *M-channel Filter Banks*. It is based on a new generalized FCPT-generating construction. This construction has a rich algebraic structure that supports a wide range of fast algorithms.

**Keywords:** Clifford algebra, filter banks, Golay-Shapiro sequences, Fourier-Clifford-Prometheus transforms.