

1086-VL-1467      **Andrzej K Brodzik\*** ([vesperilionoidea@yahoo.com](mailto:vesperilionoidea@yahoo.com)). *Design of polyphase sequences with sparse disjoint support discrete Fourier transform.*

In this work the design of polyphase sequence sets with sparse disjoint support semi-polyphase discrete Fourier transform is considered. The design is undertaken in the generalized Fourier space, the Zak space. Several tessellations and tessellation combinations of the Zak transform lattice, including the tessellation  $KM^2 \times M$ , where  $KM \in \mathbb{Z}$ , are analyzed. Sequence constructions associated with these tessellations are characterized in terms of sparsity of the discrete Fourier transform, flexibility of spectral null placement, correlation properties, sequence set size, and multiplicity of constructions. (Received September 26, 2012)