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Azita Mayeli* (amayeli@math.sunysb.edu), Mathematics Department, Room N707, New York City College of Technology, 300 Jay Street, Brooklyn, NY 11201. *Multiresolution Shannon-type wavelet on the Heisenberg group.*

Multiresolution Analysis (MRA) is a mathematical tool for the construction of orthonormal wavelet bases for $L^2(\mathbb{R}^n)$. Motivated by MRA in the Euclidean setting, in this talk I will present a notion and then a concrete example of a multiresolution analysis on the Heisenberg group \mathbb{H} . For our example, in contrast to the usual approach on \mathbb{R}^n , we start with construction of a sinc-type function using the group Fourier transform. As we will discuss, the sinc-type function implies the existence of a band-limited scaling function in a shift-invariant and closed subspace of $L^2(\mathbb{H})$ and hence the existence of a Parseval frame for $L^2(\mathbb{H})$. We call the generator of this frame a Shannon-type wavelet on \mathbb{H} . (Received September 16, 2009)