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Xiqiang Zheng* (xysue2000@yahoo.com), 324 University Village South, #4, Gainesville, FL 32603. *The Discrete Fourier Transform and Fractal Dimension of a Sequence of Hexagonal Arrays for a Multiresolution Digital Earth Model*. Preliminary report.

This presentation concerns a multiresolution digital earth model called Pyxis structure developed by the Pyxis Innovation Inc. The Pyxis structure consists of a certain sequence of arrays of hierarchical hexagonal grids together with an elegant method for labeling the lattice points. We provide an approach to the discrete Fourier transform on those arrays and compute the fractal dimension of the limit boundary of the Pyxis structure. (Received September 03, 2007)