1108-60-473     **Vladas Pipiras\*** (`pipiras@email.unc.edu`), Chapel Hill, NC 27599. *On circulant matrix embeddings in synthesis of stationary Gaussian fields.*

Circulant matrix embedding is one of the most popular and efficient methods for the exact generation of a Gaussian stationary (possibly long-range dependent) univariate series, given its autocovariance function. Although the circulant matrix embedding has also been used for the generation of Gaussian stationary (possibly long-range dependent) random fields, there are many practical covariance structures of random fields where the classical embedding method breaks down, in the sense that some of the eigenvalues of the covariance embedding are negative. In this talk, I will discuss several approaches to modify the classical circulant matrix embedding so that all the eigenvalues are nonnegative.

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