1154-VC-2688   **Boyan S. Kostadinov*** (`bkostadinov@citytech.cuny.edu`). *Iterated Circular Convolutions in the Binomial Options Pricing Model.*

This work was inspired by the observation that iterated circular convolutions can be used to express the martingale pricing algorithm in the binomial options pricing model. We use discrete Fourier analysis in this context of iterated circular convolutions to derive analytical results that could prove useful for fast real-time options pricing on algorithmic trading platforms, as well as for a deeper theoretical understanding of no-arbitrage options pricing in terms of the inverse Fourier transform of the terminal option payoff, and the Fourier transform of a special weight vector built from the risk-neutral probabilities. This work is a direct application of a surprisingly similar problem in geometry that we have investigated in the context of limiting forms of iterated circular convolutions of random skew polygons in higher-dimensional Euclidean spaces. (Received September 17, 2019)