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Free stable distributions

I will discuss some analytical properties of free stable distributions, derived using Mellin transform technique. The results include an explicit formula for the Mellin transform, an explicit series representations for the characteristic function and for the density of a free stable distribution. All of these formulas bear close resemblance to the corresponding expressions for classical stable distributions. One consequence of these results is a factorization of a classical stable random variable into an independent (in the classical sense) product of a free stable random variable and a power of a Gamma(2) random variable. This talk is based on joint work with Takahiro Hasebe.