Turán-type inequalities for the generalized hypergeometric function

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We will discuss logarithmic convexity and concavity of the generalized hypergeometric function with respect to simultaneous shift of several parameters (mainly from [1]). Integral representations and properties of Meijers G function play an important role in the proof of log-convexity. When all parameters are shifted we use series manipulations to examine the power series coefficients of the generalized Turánian formed by the generalized hypergeometric function. In cases when all zeros of the generalized hypergeometric function are real, we further explore the consequences of the extended Laguerre inequalities.

This is based on a joint work with D. Karp.

References

[1] S. Kalmykov, D. Karp. Log-concavity and Turán-type inequalities for the generalized hypergeometric function. Analysis Mathematica (accepted).