Markov inequalities in L_2 -norms with the Laguerre and Gegenbauer weights

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In this talk I will present some tight upper and lower bounds for the best constants in the Markov inequality for the first derivative of algebraic polynomials in the L_2 norms induced by the Laguerre and the Gegenbauer weight functions. The technique employed for their derivation is sharp estimation of certain norms of related matrices.

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References

- G. Nikolov and A. Shadrin, On the Markov Inequality in the L2-Norm with the Gegenbauer Weight, Constr. Approx. (2018), https://doi.org/10.1007/s00365-017-9406-2
- [2] G. Nikolov and A. Shadrin, Markov L₂ Inequality with the Laguerre Weight, in: Constructive Theory of Functions, Sozopol 2016 (K. Ivanov, G. Nikolov, and R. Uluchev, eds.), Prof. Marin Drinov Academic Publishing House, Sofia, 2017, pp. 197–211.