

ON THE BEST CONSTANTS OF SCHUR MULTIPLIERS OF SECOND ORDER DIVIDED DIFFERENCE FUNCTIONS

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We give a new proof of the boundedness of bilinear Schur multipliers of second order divided difference functions, as obtained earlier by Potapov, Skripka and Sukochev in their proof of Koplienko's conjecture on the existence of higher order spectral shift functions. Our proof is based on recent methods involving bilinear transference and the Hörmander-Mikhlin-Schur multiplier theorem. Our approach provides a significant sharpening of the known asymptotic bounds of bilinear Schur multipliers of second order divided difference functions. Furthermore, we give a new lower bound of these bilinear Schur multipliers, giving again a fundamental improvement on the best known bounds obtained by Coine, Le Merdy, Potapov, Sukochev and Tomskova.

Joint work with Martijn Caspers.