STABILITY IN MARTINGALE INEQUALITIES.

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Following the seminal work of Burkholder in the 80's, there has been considerable interest in sharp inequalities for martingales and their applications to various problems in analysis. Unlike many sharp inequalities in analysis and geometry, extremals for the martingale inequalities do not exist and equality is never attained except for trivial cases. In this talk we discuss the nature and stability of the almost extremals in Burkholder's inequalities for differentially subordinate martingales. Similar results will be discussed for the real and imaginary parts of the Beruling-Ahlfors operator which were the motivation for the martingale results.

This talk is based on joint work with Adam Osękowski of the University of Warsaw.