

The history of variation diminution

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I will give a gentle historical (and ongoing) account of the variation diminishing property and of matrices that satisfy it. This is a fundamental property in total positivity theory studied for much of the past century, including by Fekete-Polya, Schoenberg, Motzkin, Gantmacher-Krein and Whitney. It continues to be pursued actively, for both theoretical reasons as well as applications in statistics, differential equations etc. I will end with some recent joint work with Shivangi Yadav.