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## Lower Bounds On Products Of Correlation Coefficients

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**Abstract:** We consider square integrable stochastic variables  $X_1, \dots, X_n$  without imposing any further conditions on their distributions. If  $r_{i,j}$  denotes the correlation coefficient between  $X_i$  and  $X_j$  then the product  $r_{1,2}r_{2,3} \cdots r_{(n-1),n}r_{n,1}$  is bounded from below by  $-\cos^n(\pi/n)$ . The configuration of stochastic variables attaining the minimum value is essentially unique.



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