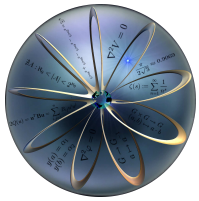

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commuting matrices are simultaneously triangularizable

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Theorem 1. *All matrices in the below are complex $n \times n$ matrices.*
Let A,B be matrices and $AB = BA$. Then there exists a unitary matrix Q such that

$$Q^H AQ = T_1 \ , Q^H BQ = T_2$$

where ^{H} is the conjugate transpose and T_1, T_2, are upper triangular matrices.