

# Almost commuting matrices and related topics

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A classical problem in linear algebra and operator theory is the following: must almost commuting matrices be nearly commuting? Where "nearly" and "almost" are in the sense of a norm,  $\|\cdot\|$ , defined on the set of complex matrices. A lot of research has been done for the case when  $\|\cdot\|$  is the operator norm. Recently, the case when  $\|\cdot\|$  is the normalized Hilbert-Schmidt norm has been studied. I don't know any result for other norms, in particular the question seems to be open for the case when the norm is the normalized rank distance. In this talk we will give a survey of these results and other related topics.