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Vladimir Koltchinskii* (vlad@math.gatech.edu). *Concentration bounds for sample covariance operators.*

We will discuss moment bounds and concentration inequalities for sample covariance operators based on n i.i.d. Gaussian random variables with values in a separable Banach space. These bounds provide a dimension-free characterization of the operator norm of the deviation of the sample covariance from the true covariance in terms of two parameters of the true covariance: its operator norm and its so called “effective rank”. Most of the results are based on a joint work with Karim Lounici. (Received January 18, 2016)