İSTANBUL ANALYSIS SEMINARS

OPERATOR LIPSCHITZ FUNCTIONS

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Abstract: A function f continuous on the real line $\mathbb{R}$ is said to be operator Lipschitz if

$$\|f(A) - f(B)\| \leqslant c \|A - B\|$$

for all self-adjoint operators A and B, where a number c depends on f only. Clearly, every operator Lipschitz function f satisfies the usual Lipschitz condition: $|f(x) - f(y)| \leqslant c |x - y|$ for all $x, y \in \mathbb{R}$. It is well known that the converse is not true.

I am going to present a short introduction to the theory of operator Lipschitz functions.

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