解析セミナー

講演者: **宮本 勇輝 氏** (千葉大学)

“On Paszkiewicz’s conjecture about a product of positive contractions”

Abstract

The Paszkiewicz conjecture about a product of positive contractions asserts that given a decreasing sequence $T_1 \geq T_2 \geq \dots$ of positive contractions on a separable infinite-dimensional Hilbert space, the product $S_n = T_n \dots T_1$ converges strongly. In this talk, we take a new approach by analysing the limit of the positive part $A = \lim_{n\to\infty} |S_n|$ (which always exists, regardless of the existence of $\lim_{n\to\infty} S_n$) and extend the class of examples for which the conjecture holds. We also show how an operator algebraic viewpoint can be useful to study the Paszkiewicz conjecture. Finally, we also show that the Paszkiewicz conjecture is true for all spectrally ordered sequences, i.e., those sequences for which $T_1^k \geq T_2^k \geq \dots$ holds for every $k \in \mathbb{N}$. This is a joint work with Hiroshi Ando.

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