

INTERNATIONAL BIWEEKLY ONLINE SEMINAR ON ANALYSIS, DIFFERENTIAL EQUATIONS AND MATHEMATICAL PHYSICS

Coordinators: Prof. Alexey Karapetyants, Prof. Vladislav Kravchenko

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Minimal commutant and double commutant property for analytic Toeplitz operators

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We study when the commutant $\{M_\varphi\}'$ and the double commutant $\{M_\varphi\}''$ are minimal where M_φ is an analytic Toeplitz operator induced in the Hardy space $H^2(\mathbb{D})$ by an analytic function φ bounded on the unit disk \mathbb{D} . Our work centers on the existing connection between the minimality of $\{M_\varphi\}'$ and the density on $H^2(\mathbb{D})$ of the polynomials on φ . This connection continues being true for the minimality of the double commutant $\{M_\varphi\}''$ when φ is in the Thomson-Cowen's class, but the density now is given in term on some subspaces of $H^2(\mathbb{D})$. If we denote $\gamma(t)$ denotes the unit circle and $\varphi \in H^\infty(\mathbb{D})$, along the way, some geometric conditions are discovered in terms of the winding number $n(\varphi(\gamma), a)$ that don't guarantee the minimality of the double commutant of M_φ (joint work with María José González).

*Seminar website: <https://msrn.sfedu.ru/sl>. The seminar uses Microsoft Teams online platform.
Please send questions to ademp.seminar@gmail.com (Tatiana Andreeva, scientific secretary).

The seminar is organized by the coordinators Alexey Karapetyants and Vladislav Kravchenko within the activities of the Regional Mathematical Center of the Southern Federal University in collaboration with Institute of Mathematics, Mechanics and Computer Sciences of the Southern Federal University and the OTHA research group in Operator Theory and Harmonic Analysis.



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