University of Crete
Departments of Mathematics and Applied Mathematics

Analysis Seminar

1:15pm, Tuesday, 25 October, 2016
Room A-303

Ilya M. Spitkovsky, *New York University, Abu Dhabi*

Factorization of almost periodic matrix functions: some recent results and open problems

The set AP of (Bohr) almost periodic functions is the closed sub-algebra of $L_\infty(\mathbb{R})$ generated by all the exponents $e_\lambda(x) := e^{i\lambda x}$, $\lambda \in \mathbb{R}$. An AP factorization of an n-by-n matrix function G is its representation as a product $G = G_+ \text{diaag}[e_{\lambda_1}, \ldots, e_{\lambda_n}]G$, where $G_+^{\pm 1}$ and $G_-^{\pm 1}$ have all entries in AP with non-negative (resp., non-positive) Bohr–Fourier coefficients. This is a natural generalization of the classical Wiener–Hopf factorization of continuous matrix-functions on the unit circle, arising in particular when considering convolution type equations on finite intervals. The talk will be devoted to the current state of AP factorization theory. Time permitting, problems still open will also be described.