V. M. MOLYBOGA

Completeness of the Rootvector System

Institute of Mathematics of NAS of Ukraine, Kyiv

On the complex Hilbert space $L^2(\mathbb{T})$, $\mathbb{T} := \mathbb{R}/2\mathbb{Z}$, we consider the non-selfadjoint periodic operators

$$S_{per}(V)u := (-1)^m \frac{d^{2m}}{dx^{2m}} u + V(x)u, \quad m \in \mathbb{N},\ u \in \mathrm{Dom}(S_{per}(V)),$$

with complex-valued 2-periodic distributions $V(x)$ from the negative Sobolev space $H^{-m}_{per}(\mathbb{T})$ as potentials [1].

Theorem ([2]). *The system of the all rootvectors of the periodic operator $S_{per}(V)$ is complete in the Hilbert space $L^2(\mathbb{T})$.*

[1] V. A. Mikhailets, V. M. Molyboga *Ukrainian Math. J.* **59**, (2007), p. 785–797.

[2] V. M. Molyboga *Bull. Univ. Kyiv: Physics and Math.*, (2010), to appear.