Completely hyperexpansive operators with finite rank defect operator and de Branges-Rovnyak spaces

Saee Joshi (S.P. College, Pune, India)

The process of identifying a Dirichlet-type space $D(\mu)$ for a positive, Borel measure μ, supported on the unit circle $\mathbb{T}$, with a de Branges-Rovnyak space was initiated by Sarason [2]. A characterization of the symbol for a de Branges-Rovnyak space for which the shift operator is a 2-isometry, was provided in [3]. In the present work, capitalizing on the Aleman's model [1] for the cyclic, analytic, completely hyperexpansive operators, we provide a characterization of cyclic, analytic, completely hyperexpansive operator with finite rank defect operator in terms of the symbol for a de Branges-Rovnyak space.

The talk is based on joint work with Prof. Vinayak M. Sholapurkar.

[1] Alexandru Aleman: *The multiplication operator on Hilbert spaces of analytic functions* (1993).

[2] Donald Sarason: *Local Dirichlet spaces as de Branges-Rovnyak spaces*, Proceedings of the American Mathematical Society **125** (1997), no. 7, 2133–2139.

[3] Karim Kellay and Mohamed Zarrabi: *Two-isometries and de Branges–Rovnyak spaces*, Complex Analysis and Operator Theory **9** (2015), no. 6, 1325–1335.