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Hypercyclicity of Derivations

We examine the hypercyclicity of generalised derivations $S \mapsto AS - SB$, for fixed bounded linear operators A, B, on spaces of operators. Hitherto the principal result in this setting has been the characterisation of the hypercyclicity of the left and right multiplication operators by Bonet, Martínez-Giménez and Peris (2004).

The main example I will show is the existence of non-trivial hypercyclic generalised derivations on separable ideals of operators. I will also outline joint work with Saksman and Tylli, which gives the somewhat surprising result that scalar multiples of the backward shift operator cB never induce hypercyclic commutator maps $S \mapsto c(BS - SB)$ on separable ideals of operators on ℓ^2.