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Hilbertian Operator spaces with few completely bounded maps

Abstract: We construct several examples of Hilbertian operator spaces with few completely bounded maps. In particular, we give an example of a separable 1-Hilbertian operator space X_0 such that, whenever X' is an infinite dimensional quotient of X_0, X is a subspace of X', and $T : X \to X'$ is a completely bounded map, then $T = \lambda I_X + S$, where S is a compact Hilbert-Schmidt operator. Moreover, every infinite dimensional quotient of a subspace of X_0 fails the operator approximation property. We also show that every Banach space can be equipped with an operator space structure without the operator approximation property. (Joint work with T. Oikhberg)