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Approximate amenability of $K(X)$

The first example of an approximately amenable non-amenable Banach algebra, given when the notion was introduced by R. J. Loy and I, is synthetic. Later, a host of naturally arising examples were found amongst sequence algebras, Fourier algebras, and semigroup algebras. The question of existence of a Banach space $X$ for which the Banach algebra $K(X)$ of all the compact operators on $X$ is approximately amenable, non-amenable, was open since the notion was founded in 2000. We answer the question in the affirmative. We also show that there exists an algebra of operators on a Hilbert space that is approximately amenable, non-amenable. This is joint work with Charles Read.