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Title: s-numbers of elementary operators
Abstract: A well-known theorem of Fong and Sourour states that if E is an elementary operator acting on the space $B(H)$ of all bounded linear operators on a Hilbert space H then E is compact if and only if it has the form $E(X) = \sum_{i=1}^{n} A_i X B_i$, $X \in B(H)$, for some compact operators A_i and B_i, $i = 1, \ldots, n$. In this talk we provide versions of this result in the case the ideal of compact operators is replaced by an s-number ideal. More precisely, we relate the inclusion of an elementary operator E on $B(H)$ in an s-number ideals in $B(B(H))$ to the inclusion of the operators A_i and B_i in a suitable representation of E to the corresponding s-number ideal in $B(H)$. We pay special attention to the Hilbert, Kolmogorov and approximation s-number ideals. We give an s-number ideal version of a generalisation of the Fong-Sourour Theorem for prime C*-algebras due to Mathieu.