Elementary operators that are spectrally bounded

Martin Mathieu

Abstract

A linear mapping T on a (complex, unital) Banach algebra A is called *spectrally bounded* if there exists a constant $M > 0$ such that, for all elements $x \in A$, we have $r(Tx) \leq Mr(x)$, where $r(x)$ denotes the spectral radius of x. We characterise elementary operators of length two, that is, linear mappings of the form $S\colon x \mapsto axb + cxd$, $x \in A$, where $a, \ldots, d \in A$ are given, that are spectrally bounded. In addition, such operators S which are almost spectrally bounded and those with the property that every element in the range of S has finite spectrum are described.

This is joint work with Nadia Boudi, Meknes, Morocco.

Department of Pure Mathematics, Queen's University Belfast, Belfast BT7 1NN, Northern Ireland

E-mail address: m.m@qub.ac.uk