KEN DAVIDSON, Department of Pure Mathematics, University of Waterloo, Waterloo, Ontario N2l 3G1 Spans and sums of unitary and similarity orbits of a single operator

If T is a bounded operator on a separable Hilbert space  $\mathcal{H}$  which is not of the form scalar plus compact, then every bounded linear operator on  $\mathcal{H}$  can be written as a linear combination of 14 or fewer operators unitarily equivalent to T, as a linear combination of 6 or fewer operators similar to T, and as a sum of 8 or fewer operators similar to T. When Tis not polynomially compact, the set of all sums of 2 operators similar to T is dense in  $\mathcal{B}(\mathcal{H})$ , while if T is polynomially compact, but not of the form scalar plus compact, then the set of sums of 3 operators similar to T is dense in  $\mathcal{B}(\mathcal{H})$ .