Powers and direct sums of Operators

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Abstract

If a general theory of multiplicity ever comes to be, it will undoubtedly be the case that for any operator A, the operator $A^{(2)} = A \oplus A$ has twice the multiplicity of A. As in the case of hermitian operators, it might sometimes be the case that A^2 has twice the multiplicity of A and sometimes that it does not. Though this talk will not try to begin a general theory of multiplicity, we do explore the relationship between $A \oplus A$ and A^2. Specifically we study operators A such that $A \oplus A$ and A^2 are similar, a question that has an intrinsic interest independent of any attempt at multiplicity theory.

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