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**David Opela\*** (opela@math.wustl.edu), Dept. of Mathematics, Campus Box 1146, 1 Brookings Drive, St. Louis, MO 63130. *Extension and Dilation Theorems for Operators Satisfying Relations.*

Andô's dilation theorem states that any pair of commuting Hilbert space contractions can be dilated (or extended) to a pair of commuting unitaries (co-isometries, resp.). We generalize this theorem by proving that one can dilate pairs of contractions to pairs of unitaries while preserving certain 'relations' different from  $AB = BA$  (commutation), for example the relation  $A^n B = B A^k$ . It is well-known that Andô's theorem does not generalize to triples of commuting contractions. Therefore it is interesting to study the possibility of dilating  $n$ -tuples of contractions satisfying some relations. We generalize Andô's theorem in this direction, too. (Received August 19, 2005)