

**ON SEMIGROUPS CORRESPONDING TO NON-LOCAL BOUNDARY
CONDITIONS WITH APPLICATIONS TO SYSTEM THEORY**

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Abstract. A class of infinitesimal generators, motivated by some non-local problem, is introduced. An abstract version of a system of Riccati type equations for quadratic cost control problem and for linear systems related to the introduced semigroups are obtained as well.

MSC 2000: 47D03, 49J20

Keywords: holomorphic semigroup, decomposition of generators, parabolic equations, Riccati equation.