1079-30-143 **Irina Peterburgsky***, Department of Mathematics, Suffolk University, 8 Ashburton Place, Boston, MA 02108-277. *Existence and uniqueness of solutions to generalized extremal problems for operator of differentiation.*

In the present paper, we study a wide range of extremal problems for operator of differentiation over classes of analytic functions with Hilbert or Banach space codomain. We develop technique to describe existence and uniqueness of solutions to these problems in the terms of geometric properties of codomain space.

It has been shown that a number of classical propositions from traditional analysis allow for generalization in the case of Hilbert or Banach space of functions' codomain. These generalizations differ significantly, which is due to diversity of specific geometric properties of Banach spaces under consideration. (Received January 08, 2012)