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MAXIMAL REGULAR DIFFERENTIAL OPERATORS IN
BANACH SPACES AND APPLICATIONS

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ABSTRACT

The continuity and compactness of imbedding operators in Sobolev-Lions type spaces derived. The multipoint boundary value problems for differential-operator equations are studied. Several conditions for the separability in Banach-valued L_p -spaces are given. The sharp estimates for the resolvent of the corresponding differential operator are obtained. Particularly, the positivity of these operators are established. In applications, the boundary value problems for degenerate quasielliptic partial differential equations and infinite system of differential equation on cylindrical domain are studied.

Key Words: Banach -valued function spaces; Imbedding in Sobolev-Lions type spaces; Separable boundary value problems; Differential-operator equations; ; Operator-valued multipliers; Interpolation of Banach spaces; Semigroup of operators