

Contents

Introduction	7
1. Riggings and Perturbations of Selfadjoint Operators in Krein Spaces	13
1.1. The Scale of Spaces Associated with a Selfadjoint Operator in a Hilbert Space	13
1.2. The Scale of Spaces Associated with a Selfadjoint Operator in a Krein Space	14
1.3. A Class of Perturbations of Selfadjoint Operators in Krein Spaces	18
1.4. Definitizable Operators	20
1.5. Perturbations of Definitizable Operators	23
1.6. Locally Definitizable Operators	27
1.7. Perturbations of Fundamentally Reducible Operators	28
2. A Class of Analytic Operator Functions and Their Linearizations	33
2.1. Definition of a Class of Analytic Operator Functions T . Jordan Chains of T	33
2.2. Spectral Points of Positive and Negative Type of T	36
2.3. An Operator Matrix \mathbf{M} Connected with T . Relations between the Spectra of T and \mathbf{M}	39
2.4. The Case of a Definitizable Operator Matrix \mathbf{M}	44
2.5. Minimality Properties of \mathbf{M} and Their Consequences	48
3. A Sturm-Liouville Equation Depending Rationally upon the Eigenvalue Parameter	57
3.1. The Case of a Bounded Interval	57
3.2. The Case of the Semiaxis	65
3.2. A Case where the Numerator Coefficient of the Floating Singularity Changes Sign	70
3.4. Sign Changes of the Numerator Coefficient in the Semiaxis Case	76
Symbols	83
References	85