Spectral analysis of linear relations using Ascent, Descent, Nullity and Defect

A. Sandovici

The main ingredients of this talk are the ascent, descent, nullity and defect of a linear relation in a Banach space. Their algebraic theory was developed in [1]. These notions are used in order to study the spectrum of a closed linear relation A in a Banach space in terms of the ascent, descent, nullity and defect of the relation $A - \lambda$, where λ is a complex number. Certain classes of linear relations are characterized.

References

[1] A. Sandovici, H.S.V. de Snoo, and H. Winkler, "Ascent, descent, nullity, defect, and related notions for linear relations in linear spaces", Lin. Alg. Appl., 423 (2007), 456–497.