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Spectral analysis for rank one perturbations of diagonal operators in non-archimedean Hilbert space

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Abstract: The paper is concerned with the spectral analysis for the class of linear operators $A = D_\lambda + X \otimes Y$ in non-archimedean Hilbert space, where D_λ is a diagonal operator and $X \otimes Y$ is a rank one operator. The results of this paper turn out to be a generalization of those results obtained by Diarra.

Keywords: spectral analysis, diagonal operator, rank one operator, eigenvalue, spectrum, non-archimedean Hilbert space
AMS Subject Classification: 44A35, 42A85, 42A75

References

[1] Basu S., Diagana T., Ramaroson F., *A p-adic version of Hilbert-Schmidt operators and applications*, J. Anal. Appl. **2** (2004), no. 3, 173–188.
[2] Attimu D., Diagana T., *Representation of bilinear forms in non-Archimedean Hilbert space by linear operators II*, Comment. Math. Univ. Carolin. **48** (2007), no. 3, 431–442.
[3] Diagana T., *Towards a theory of some unbounded linear operators on p-adic Hilbert spaces and applications*, Ann. Math. Blaise Pascal **12** (2005), no. 1, 205–222.
[4] Diagana T., *Erratum to: "Towards a theory of some unbounded linear operators on p-adic Hilbert spaces and applications"*, Ann. Math. Blaise Pascal **13** (2006), 105–106.
[5] Diagana T., *Non-Archimedean Linear Operators and Applications*, Nova Science Publishers, Huntington, NY, 2007.
[6] Diagana T., *Representation of bilinear forms in non-archimedean Hilbert space by linear operators*, Comment. Math. Univ. Carolin. **47** (2006), no. 4, 695–705.
[7] Diagana T., *An Introduction to Classical and p-adic Theory of Linear Operators and Applications*, Nova Science Publishers, New York, 2006.
[8] Diarra B., *An operator on some ultrametric Hilbert spaces*, J. Analysis **6** (1998), 55–74.
[9] Diarra B., *Geometry of the p-adic Hilbert spaces*, preprint, 1999.
[10] Fois C., Jung I.B., Ko E., Pearcy C., *On rank one perturbations of normal operators*, J. Funct. Anal. **253** (2008), 628–646.
[11] Ionascu E., *Rank-one perturbations of diagonal operators*, Integral Equations Operator Theory **39** (2001), 421–440.
[12] Keller H.A., Ochsenius H., *Bounded operators on non-archimedean orthomodular spaces*, Math. Slovaca **45** (1995), no. 4, 413–434.
[13] Ochsenius H., Schikhof W.H., *Banach spaces over fields with an infinite rank valuation*, p-adic Functional Analysis (Poznan, 1998), Lecture Notes in Pure and Appl. Mathematics, 207, Marcel Dekker, New York, 1999, pp. 233–293.
[14] van Rooij A.C.M., *Non-archimedean Functional Analysis*, Marcel Dekker, New York, 1978.