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John E McCarthy* (mccarthy@math.wustl.edu), Dept. of Mathematics, Washington University, 1 Brookings Drive, St. Louis, MO 63130, and **Jim Agler**. *Non-commutative Function Theory for Operators*.

Non-commutative function theory, as developed in the book [?], is the study of functions whose input is a d -tuple of n -by- n matrices and whose output is an n -by- n matrix, with the idea that it should somehow be independent of n . Nc-functions f are required to respect intertwining: if $Lx_j = y_jL$ for $1 \leq j \leq d$, then $Lf(x) = f(y)L$. Notice that all non-commuting polynomials respect intertwining.

Even though the original domains of nc-functions are sets of d -tuples of matrices, the functions often make sense on d -tuples of operators on an infinite dimensional Hilbert space \mathcal{H} . We shall discuss when nc-functions have unique extensions to domains in $B(\mathcal{H})^d$.

References

- [1] Dmitry S. Kaliuzhnyi-Verbovetskyi and Victor Vinnikov. *Foundations of free non-commutative function theory*. AMS, Providence, 2014.

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