1099-46-165   **Gulnara Abduvalieva**, Department of Mathematics, Drexel University, 3141 Chestnut St.,
Philadelphia, PA 19104, and **Dmitry S. Kaliuzhnyi-Verbovetskyi***
(`dmitryk@math.drexel.edu`), Department of Mathematics, Drexel University, 3141 Chestnut St.,
Philadelphia, PA 19104. *Fixed-point and implicit/inverse function theorems for noncommutative
functions.* Preliminary report.

Noncommutative functions are mappings of matrices over a module to matrices over another module (in particular analysis problems, these modules can be topological vector spaces) that (1) respect matrix sizes, (2) respect direct sums of matrices, (3) respect similarities of matrices. In various analytic settings, just a local boundedness assumption already guarantees the analyticity of a noncommutative function. We show that the theorems of classical analysis highlighted in the title have a stronger form when applied to a noncommutative function. (Received February 06, 2014)