

1084-26-295

**Volodymyr K. Maslyuchenko\*** ([math.analysis.chnu@gmail.com](mailto:math.analysis.chnu@gmail.com)), Chernivtsi, 58000, Ukraine. *On approximation of separately continuous functions*. Preliminary report.

The investigations started with the seminal result of A. Lebesgue. He has showed that every separately continuous function on  $\mathbb{R}^2$  belongs to the first Baire class. This result has been developing in two directions. The first one concerns point-wise approximation of separately continuous mappings by jointly continuous mappings. Research in this direction were made by H. Hahn, W. Moran, B. Johnson, J. Saint-Raymond, W. Rudin, G. Vera, V. Maslyuchenko, V. Mykhaylyuk, O. Sobchuk, T. Banakh, O. Maslyuchenko, O. Karlova and others. The second direction was started by M. Tsuji and is devoted to the question of the section-wise uniform approximation of separately continuous functions by means of different aggregates. The result of Tsuji was developed in the last years by V. Maslyuchenko, H. Voloshyn, O. Maslyuchenko and O. Nesterenko. We present these results which use Bernstein's, Fejér's and Jackson's operators, introduce a natural topology of section-wise uniform convergence on the space of separately continuous mappings on  $[0, 1]^2$ , and study the sequential closure of the set of all polynomials. (Received September 04, 2012)