THE DIAGONALIZATION PROCEDURE FOR THE FINITE DIMENSIONAL DIFFERENTIAL OPERATOR EQUATIONS SYSTEM OVER THE m-DIMENSIONAL COMPLEX SPACE

IRINA DMITRIEVA

Abstract. The present article is a generalization of the author's former results concerning the partial differential operator analog to the well known algebraic Gauss method.

MSC 2010. 30E99, 35Q60.

Key words. Diagonalization, complex space, vector function, scalar function, system of operator equations.

REFERENCES

[1] Ivanitckiy, A.M. and Dmitrieva, I.Yu., *Technical scientific report "Diagonalization of the "complete" Maxwell system of the differential equations"*, Odessa 2007, ONAT (Odessa National Academy of Transcommunications), state registered number **0105u007232**, 10–41 (in Russian).

[2] Ivanitckiy, A.M. and Dmitrieva, I.Yu., *Technical scientific report "Investigation of the electric circuits and electric fields with the expo-functional influences" (final)*, Odessa 2008, ONAT, state registered number **0108u010946**, 10–23 (in Russian).

[3] Komech, A.I., *Scientific and engineering results. Current mathematical problems. Fundamental trends. PDE's,* Vol. **31**, 127–261, Moscow, Nauka, 1988 (in Russian).

[4] Vladimirov, V.S., *Generalized functions in mathematical physics,* Moscow, Nauka, 1979 (in Russian).

[5] Dmitrieva, I., *On the constructive solution of n-dimensional differential operator equations' system and its application to the classical Maxwell theory*, Proc. of the 6th Congress of Roman. Mathem., Bucharest 2007, Vol. **1**, 241–246, Editura Academiei Române, Bucureşti, 2009.

[6] Dmitrieva, I., *Diagonalization problems in classical Maxwell theory and their industrial applications*, Proc. of the Internat. Conf. on Econophysics etc. (ENEC08), Bucharest 2008, 11–23, Victor Publishing House, Bucharest 2009.

South Ukrainian National Pedagogical University
Institute of Physics and Mathematics
Staroportofrankovskaya Str. 26
65020 Odessa, Ukraine

Odessa National Academy of Telecommunications
Higher Mathematics Department
Kuznechnaya Str. 1
65029 Odessa, Ukraine
E-mail: `irina.dm@mail.ru`