CANONICAL FORMS OF THE FUNCTIONS OF FOUR VARIABLES

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Abstract. In two precedent papers the author studied the nomographic functions of four variables $F(z_1, z_2, ..., z_n)$; $F : D \to \mathbb{R}, D \subset \mathbb{R}^4$. The first paper has dealt with a classification of these functions according to their rank with respect to the variables they depend on. In the second one we analyzed the nomograms in space with coplanar points, on which the functions can be nomographically represented. These functions of four variables are of rank two with respect to each of their variables.

This paper carries on the study of the functions of four variables in order to find their canonical forms (analogous to those of three variables) as well as the nomograms in space with coplanar points on which the functions can be nomographically represented. We are also making an attempt at finding parallelism between the canonical forms found out by Kazangapov respectively Wojtowicz. The factors of anamorphosis is also examined. These permits the writing of the function in the form of one determinant Massau in space. The number of these distinct projective determinants is established consequently the corresponding nomograms to the function F, to the equation $F(z_1, z_2, ..., z_n) = 0$, respectively.