Existence of immovability lines of a partial mapping of Euclidean space $E_5$9

Gulbadan Matieva[1], Cholponai Abdullaeva[2]

[1] *OshSU, c. Osh, Kyrgyz Republic, gulbadan_57@mail.ru*

[2]*Kyrgyz-Uzbek University c. Osh, Kyrgyz Republic, cholponabdulla@mail.ru*

Abstract: In domain $\Omega \subset E_5$ it is considered a set of smooth lines such that through a point $X \in \Omega$ passed one line of given set. The moving frame $\Re = (X, \overrightarrow{e}_i)\,(i, j, k = \overline{1,5}$ is frame of Frenet for the line ω^1 of the given set. Integral lines of the vector fields $\overrightarrow{e}_i$ are formed net Σ_5 of Frenet. There is exist the point $F_5^4 \in (X, \overrightarrow{e}_5)$ on the tangent of the line ω^5. When the point X is shifted in the domain Ω the point F_5^4 describes it's domain Ω_5^4 in E_5. It is defined the partial mapping $f_5^4 : \Omega \to \Omega_5^4$ such that $f_5^4(X) = F_5^4$.

Necessary and sufficient conditions of immovability of lines

$(X, \overrightarrow{e}_1)$, $(X, \overrightarrow{e}_2)$, $(X, \overrightarrow{e}_3)$ in partial mapping f_5^4 are proved.

Keywords: Partial mapping, cyclic net of Frenet, Frenet frame, pseudofocus, immovability of line.

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