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Section:

5. Differential Geometry and Global Analysis

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Problems of lifts of affinor structures on a pure-cross section.

Section: 2

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Problems of lifts of affinor structures on a pure-cross section.

Let M_n be an n-dimensional differentiable manifold of class C^∞, $T_0^q(M_n), q > 0$ its tensor bundle and$\varphi \in \mathcal{T}_1^1(M_n)$be affinor structure on$M_n$and $\xi \in \mathcal{T}_0^q(M_n)$the pure tensor field with respect to theφ-structure. The main purpose of the present paper is to study the behaviour on the pure cross-section of the lifts of theφ-structure. We have founded the complete lift${}^c\varphi$has along$\xi(M_n)$components

$$ {}^c\varphi_k^i = \varphi_k^i,\ {}^c\varphi_{\bar{k}}^i = 0,\ {}^c\varphi_k^{\bar{i}} = -(\Phi_{varphi}\xi)_{lk_1\cdots k_q},\ {}^c\varphi_{\bar{k}}^{\bar{i}} = \varphi_{i_1}^{k_1}\delta_{i_2}^{k_2}\cdots\delta_{i_q}^{k_q} \qquad (1). $$

with respect to the adapted(B,C)frame of the pure cross-section $\xi(M_n)$(with respetc to the natural frame see [1]), whereΦ is the Tachibana operator. horizontal lift ${}^H\varphi$ [2]. Reference: [1] A. A. Salimov, The generalized Yano-Ako operator and complete lift of the tensor fields. *Tensor (N. S)***55** (1994), 142–146.

[2] A. A. Salimov, A new method in theory of lifts tensor fields to the tensor bundle, *IZV. Vuz., Mathematics,* **3** (1994), 69–75.