Mathematical Physics

Spinor formalism and the geometry of six-dimensional Riemannian spaces

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The article consists of the Russian and English variants of Ph.D. Thesis in which the answers is given on the following questions:
1. how to construct the spinor formalism for n=6;
2. how to construct the spinor formalism for n=8;
3. how to prolong the Riemannian connection from the tangent bundle into the spinor one with the base: a complex analytical 6-dimensional Riemannian space;
4. how to construct the real and complex representations of this bundles;
5. how to construct the curvature spinors and to investigate its properties;
6. how to obtain the canonical form of a bilinear form for the 6-dimensional pseudo-Euclidean space with the even index of the metric;
7. how to construct the geometric interpretation of isotropic twistors on the isotropic cone of the 6-dimensional pseudo-Euclidean space with the index equal to 4;
8. how to construct the generalization of the Cartan triality principle to the Klein correspondence;
9. how to construct the structural constants of the octonion algebra for the initial induction step?
In this article, the initial induction step for the induction constructions, presented in arXiv:1110.4737 and arXiv:1202.0941, is constructed.

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