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5. Differential Geometry and Global Analysis

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On geometry of m-pairs manifold in projective space RP^n

One of the main results of the theory of n-multiple integrals depending on n parameters affirms that such integral under some natural condition invariantly generates the structure of Rashevsky space (pseudoriemannian space with the metric of half index) on $2n$-dimensional double fibre manifold M, associated to integral.

The family of m-pairs (m-plane – $(n-m-1)$-plane) in n-dimensional real projective space RP^n has more rich geometry then RP^n : M is $2(n-m)(m+1)$-dimensional Rashevsky space and moreover Einstein space.

The system of differential equations defining this structure on the double fibre manifold associated to the multiple integral depending on parameters is studied.