

Degenerate parallel displacements along surface of projective space

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ABSTRACT

In projective space multidimensional surface is considered as point manifold. Principle bundle of centerprojective frames, containing subbundle of linear frames, is associated with the surface. Centerprojective connection in the bundle is given by means of Laptev way. Its object contains subobject, defined linear connection in the subbundle. Curvature object of the centerprojective connection and curvature subobject of linear connection are pseudotensors - objects, vanishing which has invariant meaning. Bortolotti equipment of the surface is made. It consists in adjoining to each point of the surface hyperplane, not going through the point. It is shown, Bortolotti equipment induces centerprojective connections of two types in the associate bundle, i.e. two types of scopes of components of the centerprojective connection object are found by means of equipping quasitensors, its Pfaff derivatives and fundamental object of the 1-st order. The scopes of linear connection object coincide for both types. Deformation object of the centerprojective connection of the 1-st and 2-nd types is considered. It is pseudotensor, because its equality to zero is invariant. It is proved, the connections of two types coincide if and only if Bortolotti hyperplane is fixed. Curvature of such connection vanishes.

Centerprojective connections of both types are characterized geometrically by means of prallel displacements of Bortolotti huperplane. Degenerate parallel displacements of two types notions are introduced. Parallel displacements of Bortolotti hyperplane in the connection of the 1-st types is degeneraate of the 1-st type, since it consists in immobility of the hyperplane. Parallel displacement in the connection of the 2-nd type is degenerate one of the 2-nd type and absolute, since takes place under arbitrary movement of the hyperplane in the space along any line on the surface. Notion of projective-covariant differential is introduces. It permits to interpret geometrically the linear connection by mens of parallel displacements of directions - straight line, passing through point of surface.

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