

Misiak, Aleksander; Stasiak, Eugeniusz; Szmuksta-Zawadzka, Maria

The invariants of a pair of directions in geometry \mathbb{E}_1^n and their interpretation. (English)

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Summary: Solving a certain functional equation, we find all invariants of a pair of directions in n -dimensional pseudo-Euclidean geometry of index one \mathbb{E}_1^n . In $(n - 1)$ -dimensional space we construct a model for these directions by means of concepts characteristic of Euclidean geometry. Because it is a pseudo-orthogonal group, not orthogonal, that operates in this model, the distance between two points and the measure of an angle are not invariants. Using these changeable quantities we construct invariant quantities.

MSC:

53A55 Differential invariants (local theory), geometric objects

22F50 Groups as automorphisms of other structures

Keywords:

pseudo-Euclidean geometry; direction; scalar; invariant mapping

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