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The geometry of perpendicularity: the axiomatic multidimensional space and De Morgan's laws. (Russian. English summary) [Zbl 1432.51002](#)

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Summary: We propose the short axiomatic for finite dimensional geometrical structure, using only perpendicularity relation. This structure appear projective space in which hold De Morgan's laws. We show the connection work with the Veblen's axiom and with partition four elements to pairs various modes. The research is connected with ortholattice, matroids, Galois connections and quantum logic.

MSC:

[51A05](#) General theory of linear incidence geometry and projective geometries

[06A15](#) Galois correspondences, closure operators (in relation to ordered sets)

[06C15](#) Complemented lattices, orthocomplemented lattices and posets

Keywords:

foundation of geometry; perpendicularity; ortholattice; Galois connections; logic; projective space