

Algebraic and logical properties of the ternary relation of betweenness

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Betweenness relations—well-known from geometry—are one of the most deeply studied ternary relations in logic and mathematics. In earlier work [1] we initiated a theory of betweenness algebras as an approach to study the general algebraic and logical properties of the ternary relation of betweenness. Our overall framework is a logic $K^\#$ with two binary modalities which in some sense complement each other. This logic and its corresponding algebraic models – Boolean algebras with two binary operators – can be seen as a binary extension of the mixed logic of [3] and its expressive power vastly extends that of classical modal logic.

In the presentation I will introduce betweenness relations and the logic $K^\#$ and will report some of its properties as developed in [1, 2].

References

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