Mathematics, Statistics, and Computer Science   **@ UIC**

Logic Seminar

Distance Structures for Generalized Metric Spaces

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Abstract: Suppose M is a metric space taking distances in an arbitrary totally ordered commutative monoid R. When considered as a discrete first-order structure in a relational language, nonstandard models of the theory of M can no longer be considered as metric spaces over R, in a way coherent with the first-order theory. To solve this problem, we construct a monoid extension R* of R, with the property that any model of the theory of M is a metric space over R* under a "type-definable" metric. In the case that R is countable, and M is the countable Urysohn space over R, we use R* to characterize quantifier elimination for the theory of M.

Tuesday, March 31 at 3:00 PM in SEO 1227