

THE DEPARTMENT OF MATHEMATICAL SCIENCES PROUDLY PRESENTS

COLLOQUIUM

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Quasivarieties of pointed Abelian groups

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A *quasivariety*, or *implicational class of algebras* is a class of abstract algebras which are characterized by equations and/or by implications. A classical example of a quasivariety is the class of semi-groups which satisfy the cancellation laws: $\forall x \forall y \forall z : (xy)z = x(yz)$, $\forall x \forall y \forall z : xy = xz \rightarrow y = z$, and $\forall x \forall y \forall z : xz = yz \rightarrow x = y$.

The set of all quasivarieties which are contained in a quasivariety forms a complete lattice under set inclusion. A lattice isomorphic to such a lattice is called in the literature a *Q-lattice*.

A long standing open problem by Birkhoff and Maltsev asks: Which lattices are *Q-lattice*.

An algebra A is called a *pointed Abelian group* if it is an Abelian group with two extra constants added to the group operations of A .

In this talk, we present a result which says that the *Q-lattice* of the pointed Abelian groups is both *Q-universal* and *unreasonable*. The two concepts will be explained during the talk.

Our result confirms the existing common opinion that the problem by Birkhoff and Maltsev is truly a hard problem.

Monzón Building, Room 201, 10:45 AM
Refreshments will be served
15 minutes before the colloquium, M203

