

**Title:** Deciding Maltsev conditions

**Speaker:** Matt Valeriote

**Abstract:** In this talk I will consider the problem of determining, for a given Maltsev condition, the computational complexity of deciding if a given finite algebra satisfies it. It turns out that for many familiar Maltsev conditions, the problem is EXP-TIME complete. On the other hand, if one only considers idempotent algebras, then polynomial-time algorithms have been devised that work for certain special Maltsev conditions.

I will present some recent results on testing for Maltsev conditions and will describe an approach, via “local terms”, that has been used to construct polynomial-time algorithms for a number of Maltsev conditions, in the idempotent case. There are many open problems in this area and I will discuss several of them during my talk.

The research presented in this talk was conducted with Ralph Freese and Alexandr Kazda.