

New Mexico State University

Department of Mathematical Sciences  
Colloquium

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**Title: Bisimulation games and local finiteness**

**Friday, September 25th, 2020**

**12:00 pm, Zoom meeting: 928 8942 8561**

**Abstract:** A class of abstract algebras is locally finite if every finitely generated algebra from this class is finite. Local finiteness can be useful for solving different algorithmic problems. For the last hundred years, it was investigated for different types of algebras – beginning with the famous Burnside problem on periodic groups. In the talk we consider local finiteness for algebras related to logic – modal and Heyting algebras. We describe a method for establishing local finiteness based on winning strategies in so-called bisimulation games. In these games, two players move two tokens along a colored directed graph, so that the moves of the second player simulate the moves of the first one. Bisimulation games originated from the study of transition systems in theoretical CS, but it turns out that they can help in understanding nonclassical logics and related algebras.



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