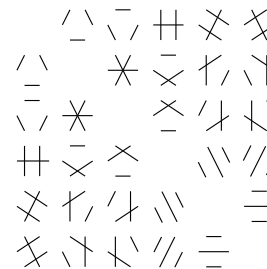


# Mathematics Seminar



## Rocky Mountain Algebraic Combinatorics Seminar

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### How do we tell things apart?

James Wilson  
Colorado State University

I will give an introduction to the mathematics of testing equality (called “isomorphism testing”). We’ll start with some everyday problems then move to the math of graphs and then groups that tries to solve it ending with open problems.

### Where do characteristic subgroups come from?

James Wilson  
Colorado State University

One way to make isomorphism testing easier is to spot something that can never change, a “characteristic” structure. I will prove a theorem that shows all characteristic subgroups come from the representation theory of categories. Never heard of representation theory of categories? Probably worth finding out because it is filled with low hanging fruit. The same idea applies to characteristic structures in rings, loops, and all essentially algebraic theories.

Weber 223  
4–6 pm, Friday, January 26, 2024  
(Refreshments 3:30–4 pm)  
Colorado State University  
4 pm, Friday, January 26, 2024

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This is a joint Denver U / UC Boulder / U of Wyoming / CSU seminar that meets biweekly.  
Anyone interested is welcome to join us at a local restaurant for dinner after the talks.



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Fort Collins, Colorado 80523