

Department of Mathematics and Statistics Colloquium

The Role of Mathematics in Scientific Explanation

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Abstract: It has recently been argued that there can be genuine mathematical explanations of physical phenomena. These purported cases have been divided into those where the explanatory role is played by mathematical operations and those where it is played by mathematical entities. In this talk, I address one example of the first, and two of the second (the explanations of the rainbow, the hexagonal shape of honeycombs, and the life cycle of magicicadas), and argue that claims that mathematics can be genuinely explanatory are unfounded. Throughout my discussion, I emphasize the representational role of mathematics, as opposed to its supposed explanatory role: the role of mathematics, even in the cases that I discuss, is to represent physical facts and help draw inferences about those facts.

Monday, October 16 at 3:50 in Roop 103

Refreshments at 3:30