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Department of Mathematics Colloquium

Using corpus linguistics to investigate mathematical explanation

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The notion of mathematical explanation is of great significance in both mathematics education and the philosophy of mathematics. However, little is know about the extent to which practicing mathematicians use the notion of explanatoriness in their own work. In this talk I will describe the creation of large-scale corpora of written research-level mathematics and physics. I will then report findings from a study that used methods of corpus linguistics to investigate the extent to which mathematicians describe themselves (or their mathematical work) as explaining mathematical phenomena in their research papers, and how this compares with (1) descriptions of themselves as engaging in related mathematical activities (such as proving theorems), and (2) descriptions of explanation in physics and day-to-day discourse.