The power of repetition

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007 Kemeny Hall, 4:00PM
Tea 3:30PM 300 Kemeny Hall

Abstract

The main reason why certain existence proofs do not lead to effective constructions is the use of the law of excluded middle. Some such uses are necessary but sometimes the law of excluded middle is only used to simplify an argument or to avoid a tedious computation. It is very difficult to distinguish these two cases since the law of excluded middle is such a common form of reasoning in everyday mathematics. Recently, a new method has emerged to distinguish these two cases which consists in analyzing what happens when the original statement is repeated infinitely often. The advantage of this method is that it does not require letting go of the law of excluded middle in order to carry out this analysis. We will talk about the origin of this method and we will look at some applications in algebra, analysis and combinatorics.

This talk should be accessible to graduate students.