Stanford Department of Mathematics
Colloquium

$p$-adic numbers and cosmology

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Abstract

The biggest conceptual problem of cosmology is called the measure problem. It has to do with the assignment of probabilities in an exponentially inflating universe, which falls apart into separate causally-disconnected regions. Neither I nor my friends had ever intended to learn about $p$-adic numbers until we realized how similar such a universe is to an endlessly growing tree-graph. The result has been some new insights from $p$-adic number theory into the measure problem and other puzzles of eternal inflation. Within the constraints of a one-hour lecture, I will explain as much of this as I can.

Thursday, October 13
4:15 p.m.
Bldg. 380, Room 380-W.