

The Bost-Connes System and the Hunt for Hilbert's 12th Problem

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Ever since Bost and Connes described what is now known as a Bost-Connes system, there has been a lot of speculation about its use in getting further in the quest to solve the elusive Hilbert's 12th Problem. Luckily, lots of progress and exciting mathematics later, we now have methods for solving number theory problems using non-commutative geometry and C*-algebras. I will discuss the history and basics of what the Bost-Connes system is, explain some of the progress made in this area, explain my own advances in this area and elaborate on whether or not Hilbert's 12th Problem really will be solved.