



KATHOLISCHE UNIVERSITÄT
EICHSTÄTT-INGOLSTADT

Mathematisches Kolloquium

A problem in number theory motivated by representation theory

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Abstract. Long time ago, when thinking about classifying certain infinite-dimensional Lie algebras, I stumbled over a problem in number theory. A positive solution of this problem will imply the result I wanted. The number theory problem is totally elementary (6th grade or so) but appears to be new: it is a strange way to determine a positive integer n by an infinite set of primes containing the set of prime divisors of n . In a recent joint paper with M. Stoll, we convinced ourselves that the problem is highly nontrivial and most likely does have a positive solution. It is still open though.

In this talk I will explain the original Lie algebra question and will then discuss our current knowledge concerning the number-theoretic problem. No prior knowledge of Lie theory will be assumed, including the definition of a Lie algebra.

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