University of Crete
Departments of Mathematics and Applied Mathematics

Colloquium

1:15pm, Tuesday, 18 October, 2016
Room A-303

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Undecidable first-order theories of R[t] with addition and fragments of multiplication

An undecidability result for the first-order theory of a ring structure leads to a "weakening" of the language in order to find at which point the theory changes from decidable to undecidable. The standard weakenings consist of replacing either or both operations by a fragment of it, i.e., an operation or relation that can be defined from it, but for which the converse is not (or at least not trivially) true. In this talk I will discuss two different fragments of multiplication: the set of images of a degree two polynomial and the relation of coprimeness. I will present my work on the undecidability of the first-order theories of certain polynomial rings for each language, and comment on possible further ideas in each case.