SEMINARIO DE GEOMETRÍA ALGEBRAICA

Martes 29 de mayo de 2007, 15:00, Seminario 238

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Impartirá la conferencia

Can Algebraic Geometry Rescue Program Verification

Summary: A new approach for automatically generating polynomial equations as program invariants from imperative programs will be presented. The focus will be on the algebraic geometry methods, particularly how for a subclass of programs, conjunctions of polynomial equations as invariants can be generated automatically without knowing any input/output specification of a program. The method has been implemented and used successfully to generate polynomial invariants of nontrivial numerical programs. The critical role of algebraic geometry in discovering these results will be discussed. Another heuristic based on quantifier elimination will also be presented. Some preliminary ideas about how to generalize these approaches to work on data types other than numbers will be discussed.