

University of Notre Dame Department of Mathematics

LOGIC SEMINAR

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Will give a lecture entitled:

Gauging the Complexity of a Problem: An Example in Computable Fields

On

Thursday, March 31, 2011

At

2:00 PM

In

258 Hurley Hall

Abstract

Let F be a computable field. We can define the splitting set, S_F , respectively the root set, R_F , to be the set of polynomials with coefficients in F that factor non-trivially in $F[x]$, resp. that have a root in F . We can also define a Rabin embedding g from F to its algebraic closure. Results from both Frohlich and Shepherdson, and Rabin show that $g(F) \equiv_T S_F \equiv_T R_F$. Using results from R. Steiner we show that under different notions of reducibility, say Bounded Turing reduction and m-reduction, this equivalence fails to hold.