

**UIC Model Theory Seminar, April 19, 2005**

**Partition theorems and computability theory**

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We will analyze various partition theorems (such as Ramsey's Theorem) with the aim of understanding the complexity of solutions to computable instances in terms of the Turing degrees and the arithmetical hierarchy. After surveying some known results for Ramsey's Theorem, we will examine theorems allowing infinitely many colors (such as the Canonical Ramsey Theorem and the Regressive Function Theorem of Kanamori and McAloon). This study unearths some interesting relationships between these theorems and Weak König's Lemma, and these connections will be emphasized.