Automorphisms of the lattice of Π^0_1 Classes

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Π^0_1 classes are important to the logical analysis of many parts of mathematics. They are important not only to computability theory but also to proof theory via systems such as WKL_0. In this talk I will report on some work looking at definability in the lattice of Π^0_1 classes and degrees of unsolvability. In particular we demonstrate that there is an analog of the Martin-Soare work on maximal sets and high degrees available in this setting, via thin classes and anr degrees. This is joint work with Richard Coles, Peter Cholak and Eberhard Herrmann.