

# APPLIED MATHEMATICS COLLOQUIUM

## BOOLEAN DECISION TREES: PROBLEMS AND RESULTS, OLD AND NEW

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### ABSTRACT:

Boolean decision trees are perhaps the simplest algorithmic model for computing boolean functions. In this model, the cost of a computation is simply the number of input bits that are accessed. There is a natural notion of a randomized decision tree, which makes use of randomness in choosing which input bits to look at. As with any model of computation, a primary goal of the research is to obtain upper and lower bounds for specific functions and general classes of functions. The methods are quite varied, including adversary arguments, algebraic/combinatorial topology, information theory, and fourier analysis.

In this talk, I will give a selective overview of past results, open problems and recent results in this area.

**MONDAY, MARCH 13, 2006**

**4:30 PM**

**Building 2, Room 105**

*Reception at 4:00 PM in Building 4, Room 174.  
(Math Majors Lounge)*

Applied Math Colloquium: <http://www-math.mit.edu/amc/spring06>  
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