The Reconstruction Problem on the Tree

MONDAY, January 10, 2011, at 4:00 PM
133 Eckhart Hall, 5734 S. University Avenue
Refreshments following the seminar in Eckhart 110.

ABSTRACT

The reconstruction problem on the tree concerns the propagation of information in Markov processes on trees and has been studied in probability, statistical physics, computational biology, information theory and theoretical computer science. I will discuss progress in establishing thresholds for the reconstruction problem and give an overview of its applications to phylogenetic reconstruction, mixing times of Markov chains, random constraint satisfaction problems and the computational complexity of counting problems.