



Universidad  
Carlos III de Madrid

# Seminario del Instituto Gregorio Millán

## Non-ergodicity in Wang–Swenden–Kotecky Monte Carlo dynamics

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### Resumen

Markov Chain Monte Carlo simulations have become a very important tool to investigate critical phenomena in Statistical Mechanics and Lattice Field Theory. Indeed, we should require some properties to the algorithm in order to ensure that it converges to the desired probability distribution. The main goal of this talk is to show that the well-known Wang-Swendsen-Kotecky (WSK) algorithm for the 4-state Potts antiferromagnet at zero temperature on a triangular lattice with periodic boundary conditions is not ergodic (and hence, it is not a legal algorithm). I will introduce all background concepts (e.g., the  $q$ -state Potts model, Markov Chain Monte Carlo algorithms, and the WSK algorithm) before sketching the main ideas leading to the proof of my claim.

- **DÍA:** Miércoles 27 de mayo de 2009
- **HORA:** 12:30
- **LUGAR:** Edificio Sabatini. Aula 2.1.D04