

SEMINARIO DE SISTEMAS DINÁMICOS DE SANTIAGO

SPEAKER: Rodrigo Bissacot (Universidade de São Paulo)

TITLE: Phase Transitions in Statistical Mechanics, Countable Markov Shifts, and Operator Algebras.

ABSTRACT: We discuss the concept of phase transition in different settings and explore the connections among them. We will give an overview of the results about phase transitions in Ising-like models showing concrete examples where the lack of the analyticity of the pressure is not connected with the changes in the set of Gibbs (DLR) measures. After, we describe two new types of phase transitions on countable Markov shifts and on their generalized versions: the volume-type and length-type. We give examples of potentials on countable Markov shifts where the set of conformal measures (a particular case of DLR measure) jumps from a set of finite measures to a set of infinite measures. For generalized countable Markov shifts (the spectrum of a commutative sub-C*-algebra of an Exel-Laca algebra, which contains the standard countable Markov shift as a dense subset) we exhibit a couple of examples where the unique conformal probability measure gives mass 1 to the set of infinite words until certain critical temperature and, after this critical value, mass 1 to the set of finite words.

Wednesday October 14th, 2020 / 3:30 PM - 4:20 PM (Santiago Time)

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