Seminar/Talk

The zero-point entropy of square hexagonal ice

Tibor Döme
ETH Zürich

Host: Laszlo Erdös

Common water ice is an unusual solid: The oxygen atoms form a periodic structure but the hydrogen atoms are highly disordered due to there being two inequivalent O-H bond lengths. The presence of these two bond lengths leads to a macroscopic degeneracy of possible ground states, such that the system has finite entropy as the temperature tends towards zero (Pauling, 1935). This measurable residual entropy does not violate the third law of thermodynamics (which, by the way, has been disproven recently). However, it has never been calculated exactly for 3D ice, only for 2D ice (Lieb, 1967). In my talk, I will use tools of classical statistical mechanics to solve the much more general six-vertex model, of which 2D ice is a special case.

Thursday, September 6, 2018 04:00pm - 06:00pm
Big Seminar room Ground floor / Office Bldg West (I21.EG.101)

This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station. Please find a schedule of the ISTA Shuttle on our webpage: https://ista.ac.at/en/campus/how-to-get-here/ The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.