

June 13 (Fri.) 10:30 – 11:30

1D anyon models and fractional exclusion statistics

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Anyon statistics is a fundamental topological property of wave functions in 2D. Anyons may also be defined in 1D with a number of interesting consequences. In particular, the lower dimensionality introduces an interplay between exchange and exclusion statistics. In this talk I will review recent work on a 1D model of interacting anyons which is an anyonic extension of the 1D Bose gas solved by Lieb and Liniger. Results obtained include the ground state, low-lying excitations and the asymptotics of correlation functions. Below the degenerate temperature the distribution profiles of strongly interacting anyons in 1D are seen to coincide with the most probable distributions of ideal particles obeying generalized exclusion statistics. A further generalisation of the interacting anyon model will also be discussed.