



Invitation to Seminar Talk

Incompressibility estimates for the Laughlin phase

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Host: Robert Seiringer

When charged quantum particles are submitted to a sufficiently strong magnetic field the motion becomes two-dimensional and restricted to the Lowest Landau Level. Strong repulsive interactions can then lead to highly correlated many-particle states, descending from the Laughlin wave function. The same effect can, in principle, occur for neutral particles like in ultra-cold quantum gases under rapid rotation.

We investigate the response of such strongly correlated ground states to variations of an external potential. This leads to a family of variational problems of a new type. Our main results are rigorous energy estimates demonstrating strong rigidity of the response. In particular we prove universal bounds on the maximum local density of these states in the limit of large particle number. We refer to these as incompressibility estimates. This is joint work with Nicolas Rougerie.

Thursday, 13 November 2014, 4:00pm

Seminar Room Mondi 2, Central Building, 1st floor



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This invitation is valid as a ticket for the IST Shuttle from and to Heiligenstadt Station. Please find a schedule of the IST Shuttle on our webpage (note that the IST Shuttle times are highlighted in dark green): http://ist.ac.at/fileadmin/user_upload/pdfs/IST_shuttle_bus.pdf
The IST Shuttle bus is marked IST Shuttle and has the Institute Logo printed on the side.