



Physical Sciences Seminar

Breakdown of superfluidity in binary Bose mixtures in two dimensions

Volker Karle (Heidelberg University)

Host: Misha Lemeshko

In this talk I will consider a two-component bosonic gas in two dimensions at low temperatures with a zero-range repulsive interaction. I will focus on the coexistence phase with superfluid behavior in both components, where a phenomenon appears which is not present in the one-component case: The non-dissipative drag between the two superfluid flows (Andreev-Bashkin effect), which originates from the interactions between different components. I will show that this behavior leads to a modification of the usual BKT transition in two dimensions. Ultimately, the renormalization group flow indicates that a collapse of the superfluid of one component can lead to the collapse of the superfluid of the other component and their critical temperatures are in that case equal.

Tuesday, November 27, 2018 02:00pm - 03:30pm

IST Austria Campus Big Seminar room Ground floor / Office Bldg West (I21.EG.101)



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: http://ist.ac.at/fileadmin/user_upload/pdfs/IST_shuttle_bus.pdf The IST Shuttle bus is marked IST Shuttle (#142) and has the Institute Logo printed on the side.