



## Physical Sciences Seminar

# Breakdown of superfluidity in binary Bose mixtures in two dimensions

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**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: <https://ist.ac.at/en/campus/how-to-get-here/> The IST Shuttle bus is marked IST Shuttle (#142) and has the Institute Logo printed on the side.