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Theory of quantum matter

Jeudi 27 Octobre 2022, 14 :00
LPTHE, INSP Jussieu towers 22-23 room 3-17
Domaines : cond-mat

Titre : *Tan's contact of a planar Bose gas : theory vs experiment*

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Résumé : *In a dilute gas, Tan's contact relate the thermodynamics to the short distance properties of quantum many-body systems. Recently, the contact of a Bose gas confined in a plane has been measured in a broad temperature range, from the normal to the superfluid phase, and across the Berezinskii-Kosterlitz- Thouless transition. We show that the contact of this quasi-2D system can be obtained from the universal equation of state of a two-dimensional Bose gas. We compute the contact using the functional renormalisation group, and find a remarkable agreement with experiment.*