

## BOSE-CONDENSATION in EXTERNAL POTENTIALS

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### ABSTRACT

- Bose-Einstein Condensation (BEC) of the Free Bose-Gas: *one-particle* quantum density of states ( $d_c > 2$ ), *magnetic field*.
- *Random potentials*: the one-particle spectrum *Lifshitz tail* reduces the critical dimensionality for the condensation in the *Perfect (not Free!)* Bose-Gas (PBG) to  $d_c = 1$ .
- *Localization* of the Bose-condensation: the Kac-Luttinger *conjecture* and Generalized BEC in *extended states*.
- Condensation in "Weak Harmonic Traps" and random boson point fields.
- Impact of particle interactions (*non-Perfect* boson gas) .