Title: Explorations in Condensed Matter - Lecture 8 A

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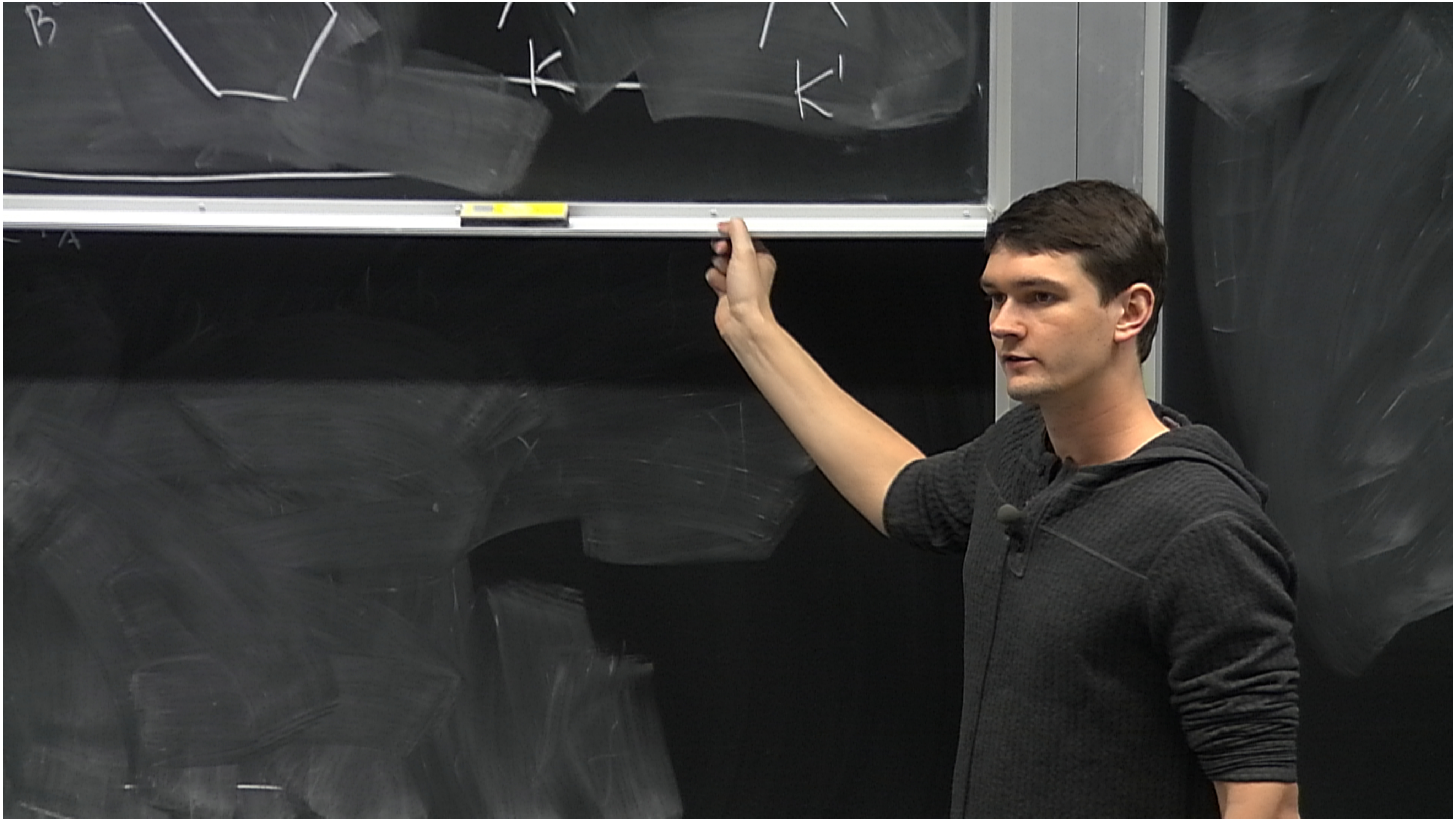
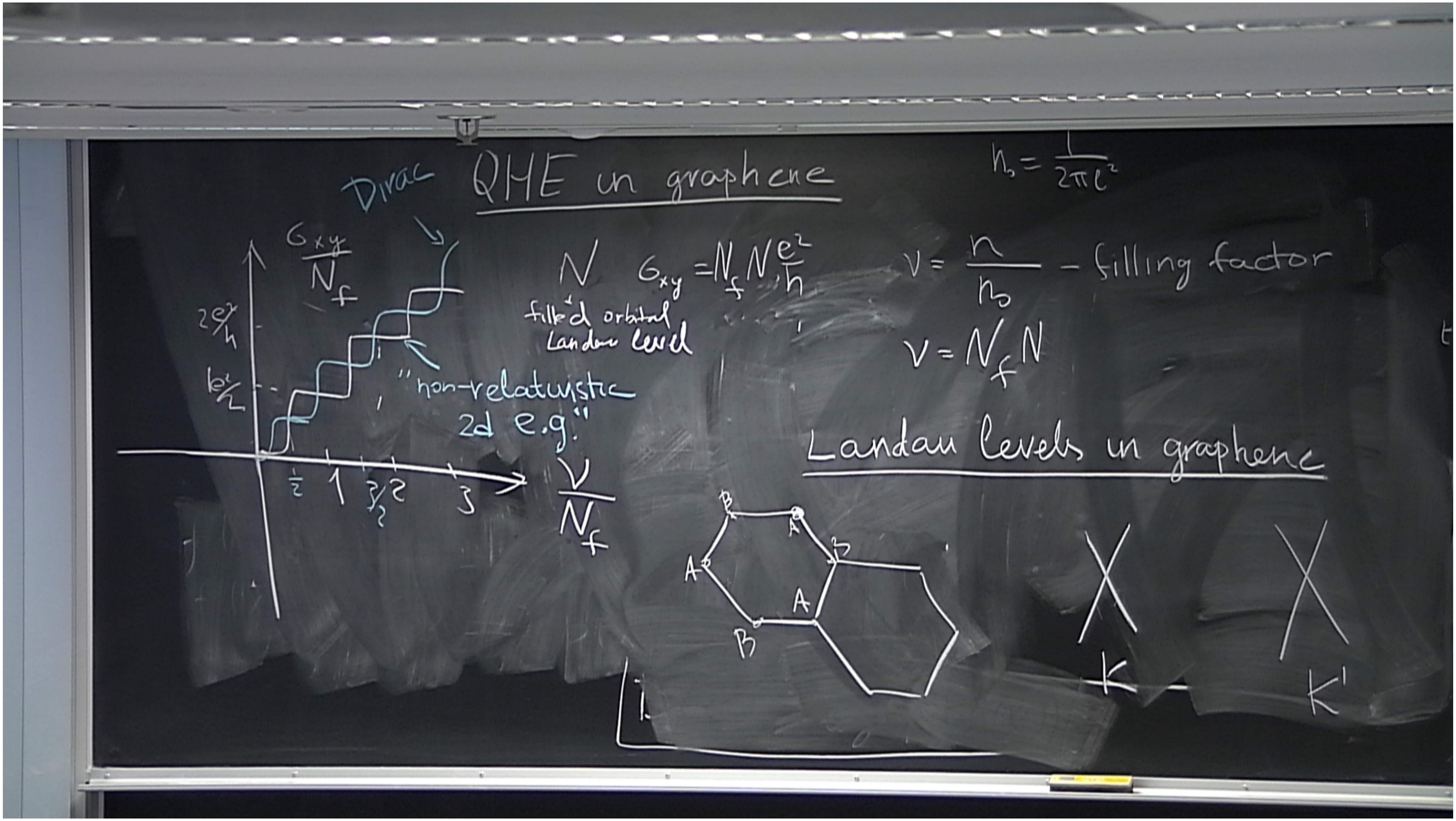
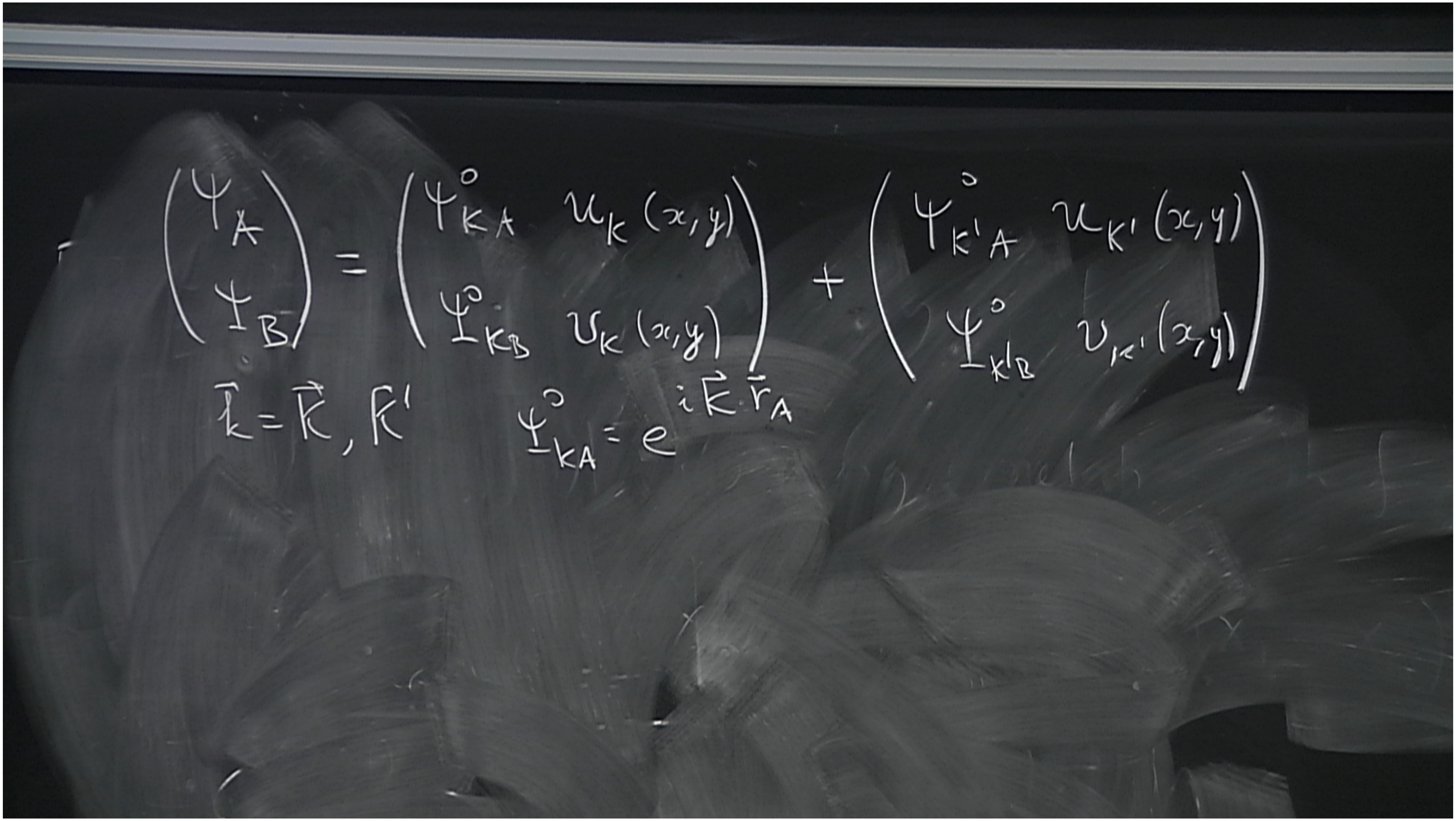
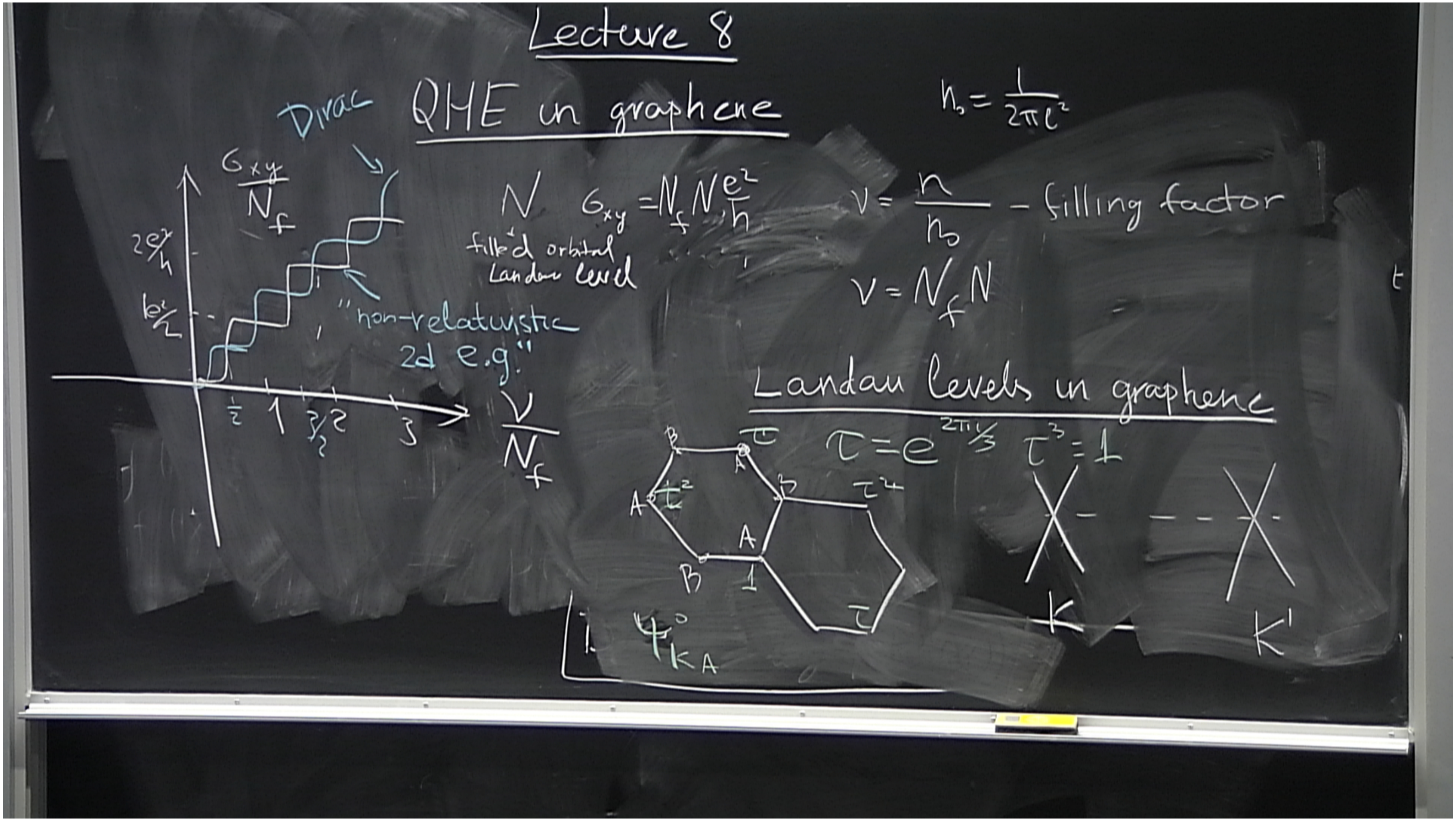
URL: http://www.pirsa.org/12040091

Abstract:


B
K
K'
A


QHE in graphene
Dirac
"non-relativistic 2d e.g."
filled orbital Landau level
- filling factor
Landau levels in graphene
A
B
K
K'


$\begin{pmatrix} \Psi_A \\ \Psi_B \end{pmatrix} = \begin{pmatrix} \Psi^0_{KA} \; u_K(x,y) \\ \Psi^0_{KB} \; v_K(x,y) \end{pmatrix} + \begin{pmatrix} \Psi^0_{K'A} \; u_{K'}(x,y) \\ \Psi^0_{K'B} \; v_{K'}(x,y) \end{pmatrix}$
$\vec{k} = \vec{K}, \vec{K}'$
$\Psi^0_{KA} = e^{i\vec{K}\cdot\vec{r}_A}$


Lecture 8
QHE in graphene
Dirac
Gxy / Nf
N   Gxy = Nf N e²/h
filled orbital Landau level
"non-relativistic 2d e.g."
ν / Nf
ν = n / nB - filling factor
ν = Nf N
Landau levels in graphene
τ = e^(2πi/3)   τ³ = 1
A
B
K
K'