

Quartic. Papers

Outline.

title ?

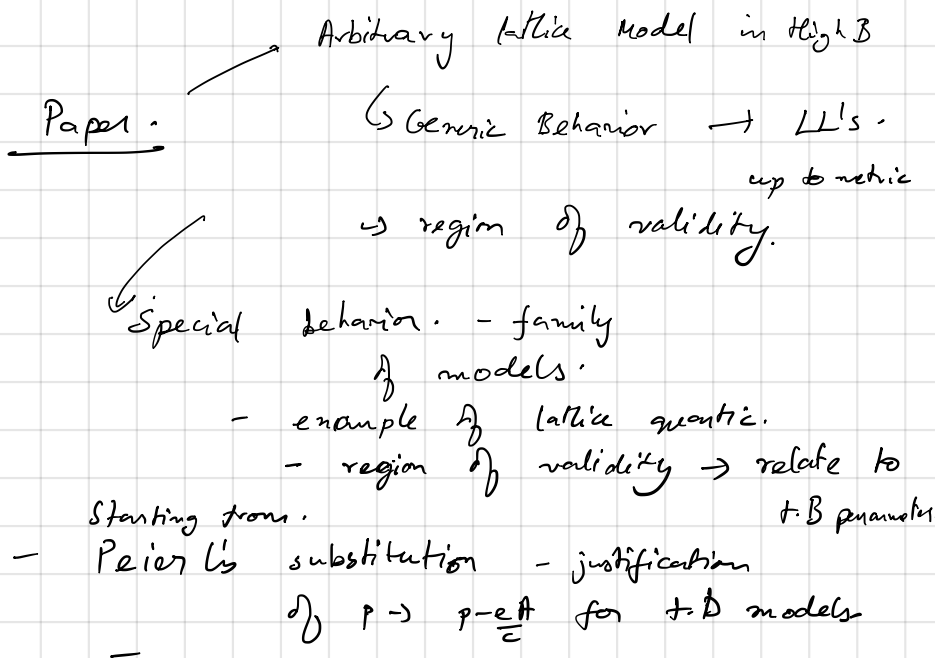
Introduction :-

- FQHE in contexts outside "isotropic" LL's. subject of much recent interest
 - Haldane's metric, FCI's.
- Here we introduce a family of models that facilitates numerical study of the FQHE outside LL's.
 - controlled \rightarrow
- Which can be exp. realized.
 - cold atoms have already realized Hofstadter.

x ————— x ————— x .
has been found.

- FQHE in flat band systems far removed from LL's.
- proposed that B.G. is the key metric that determines how suitable a host is.
- Tests on this - difficult
 - Chern bands (Jackson et al)
 - too many parameters.

- On the other, Hofstadter - 2 few.
 - B.C is controlled.
 - lack of variational freedom, role of Q.M unclear.
- subject to criticism.
 - really exploring / reflection of fact that as $l \rightarrow \infty$ the FQHE gets more stable.
- Here, we introduce a family of models.
 - $l \rightarrow \infty$, $tr \rightarrow LL$ tr .



Digression:-

$$\frac{p^2}{2m} + V(\vec{r}).$$

$$p \rightarrow p - \frac{e}{c} A$$

Pais's

$$\psi_{ij} \rightarrow \psi_{ij} e^{i\alpha \int A \cdot d\mathbf{r}}$$

$$H(k) \sim \frac{k^2}{2m} + \dots$$

$$k \rightarrow k - \frac{e}{c} A$$

- Introduce family of models -

- Analyze Quartic (general).

$$(g_{ij} \ k_i \ k_j) \ (g'_{ij} \ k_i \ k_j).$$

- Analyze $p_x^4 + p_y^4 / p_x^2 + p_y^2$.