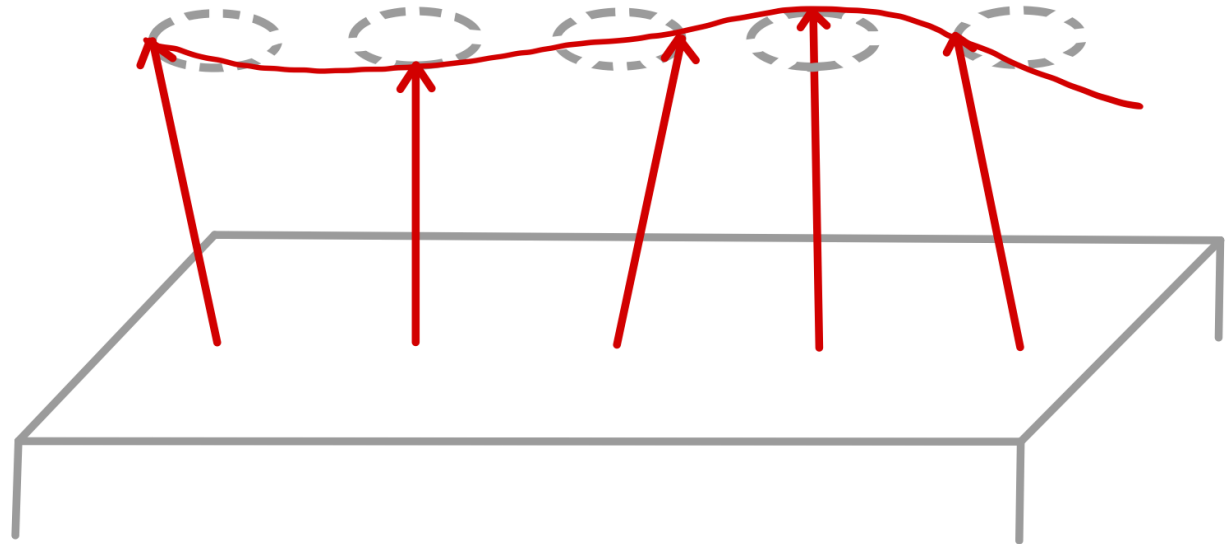


Bose-Einstein kondensasjon av magnoner

Anne Louise Kristoffersen



Partikkel BEK

- Kald gass
- Individuelle bølgefunksjoner $\rightarrow$ makroskopisk bølgefunksjon



Magnon-BEK i ferromagnetiske isolatorer

- Prosjektoppgave
- Heisenberg

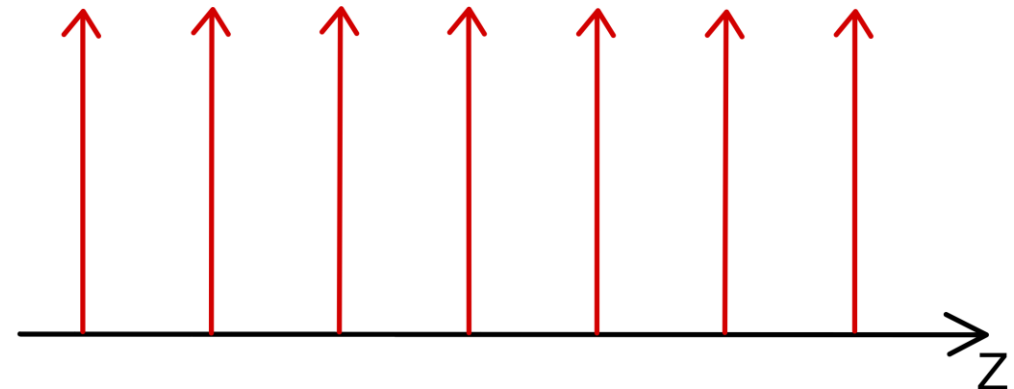
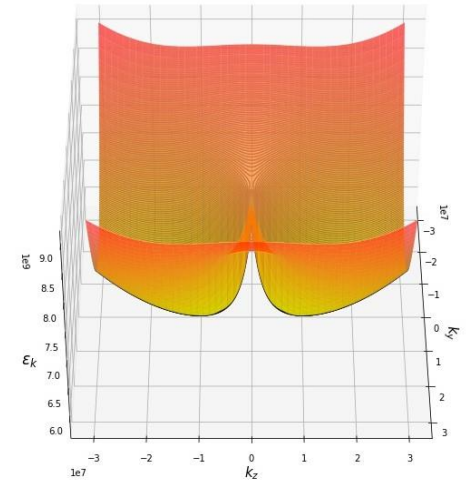
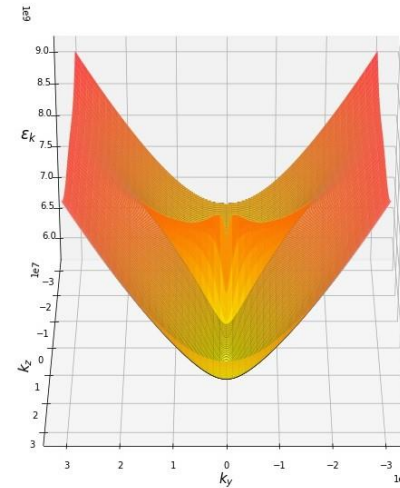
$$H_H = -J \sum_{ij} \vec{S}_i \cdot \vec{S}_j$$

- Zeeman

$$H_{Zee} = \sum_i h S_i^z$$

- Dipol

$$H_{dip} = \sum_{ij} \sum_{\alpha\beta} D_{ij}^{\alpha\beta} S_i^\alpha S_j^\beta$$



Magnon-BEK i antiferromagnetiske isolatorer

- Masteroppgave
- Dzyaloshinskii-Moriya

$$H_{DMI} = -\sum_{ij} \mathbf{D}_{ij} \cdot (\vec{S}_i \times \vec{S}_j)$$

