Center for Quantum Spintronics

Senterleder

Brataas

Senterkoordinator

Sødahl

PIs

Linder

Sudbø

Co-PIs (20%)

Duine

Klaeui

Assosierte medlemmer

Brune

Danon

Fjærestad

Professor II (20%)

Wells

Meier

Wahlstrøm

Forskere og postdocer

Jacobsen

Sun

Qaiumzadeh

Hu

Berbeau

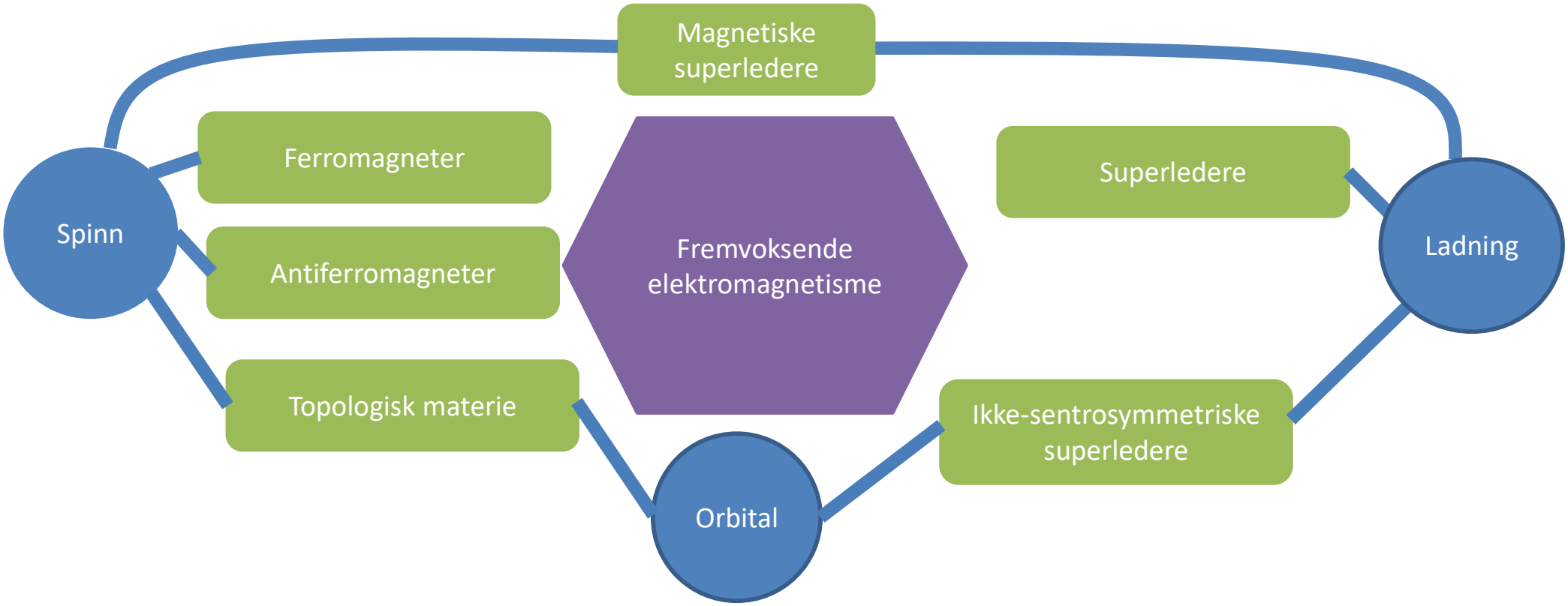
Hugdal

Center for Quantum Spintronics

QuSpin presentation video

https://www.youtube.com/watch?v=VDqzy7SB_Mc

Fremvoksende fenomener

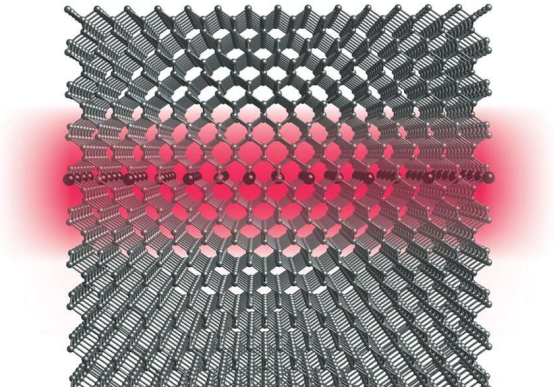


Kondenserte mediers fysikk

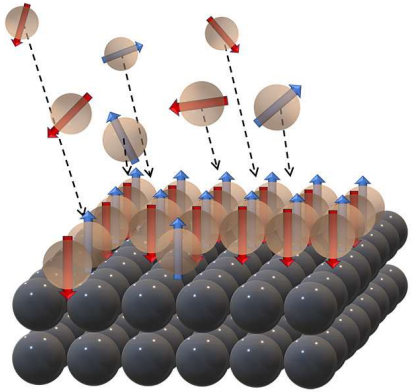
- Nye nano-skala kvantematerialer
  - Hybride systemer bestående av magnetiske isolatorer og metaller
  - To-dimensjonale (anti)ferromagneter, halvledere og metaller
  - Superledere i kombinasjon med ferromagneter og antiferromagneter
  - Spinn superflytenhet i magnetiske isolatorer
  - Skyrmioner
  - Hopfioner
  - Spinn-bølger
  - Kvantedatamaskiner
  - Topologiske materialer
- Teori
  - Kvantefelt-teori
  - Kvante transport-teori
  - Semi-klassiske beregninger
  - Spinn-dynamikk
  - Numeriske metoder
- Eksperiment
  - Spin ARPES
  - MBE – Molecular beam epitaxy
  - Transport-målinger
  - Domenevegger

Laboratorier

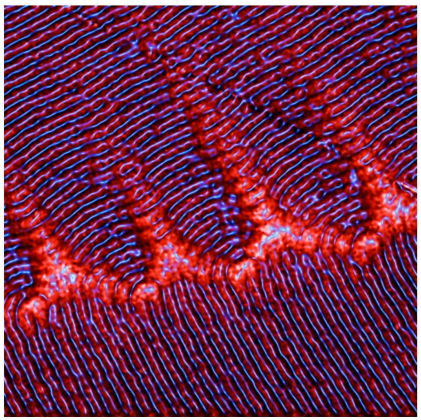
ARPES



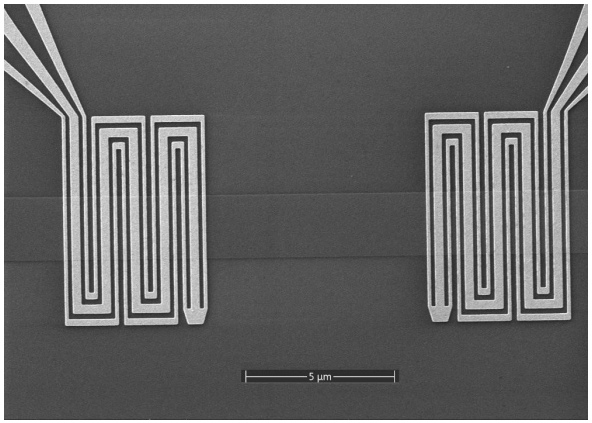
Molecular Beam Epitaxy



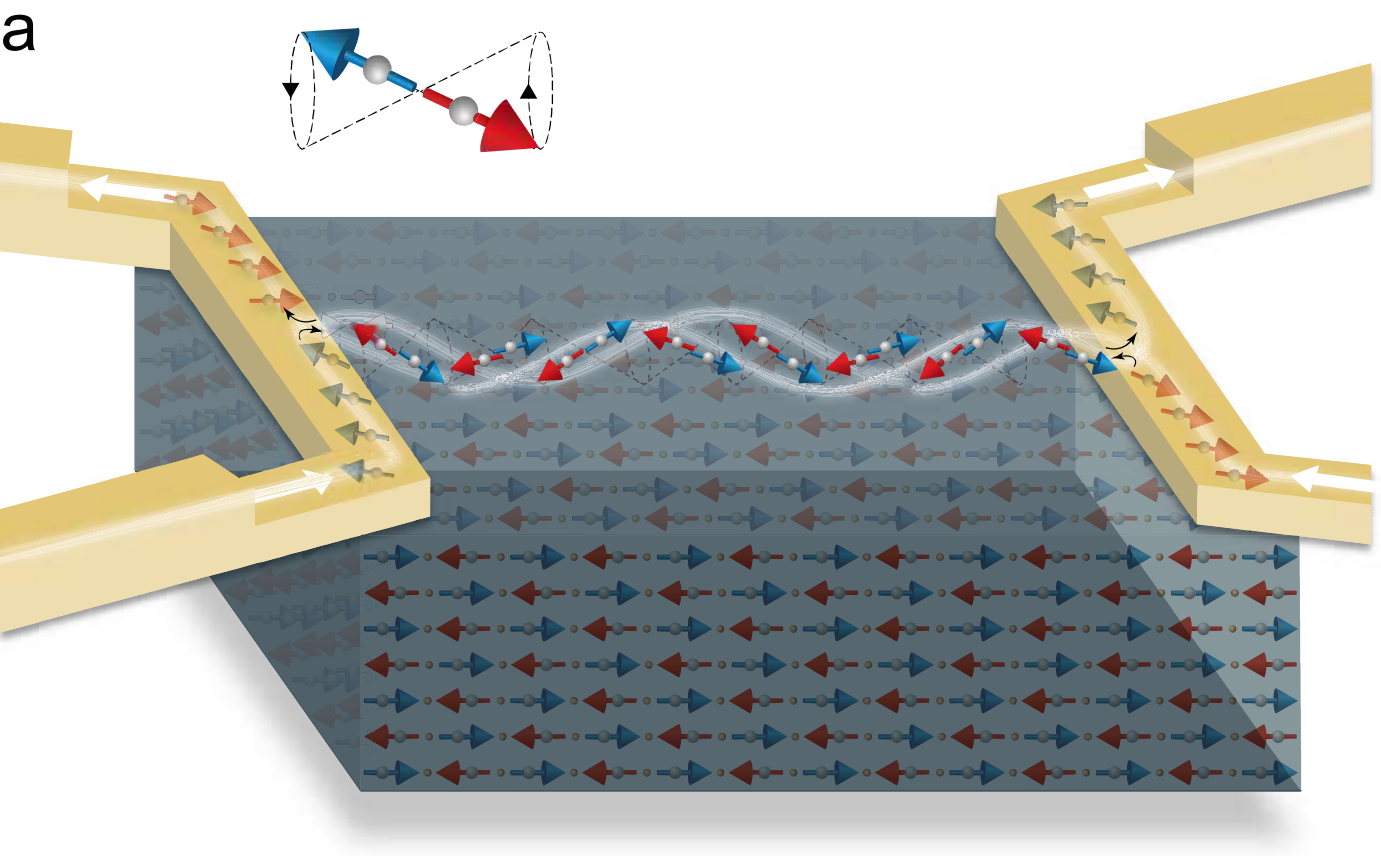
Functional Topological Systems

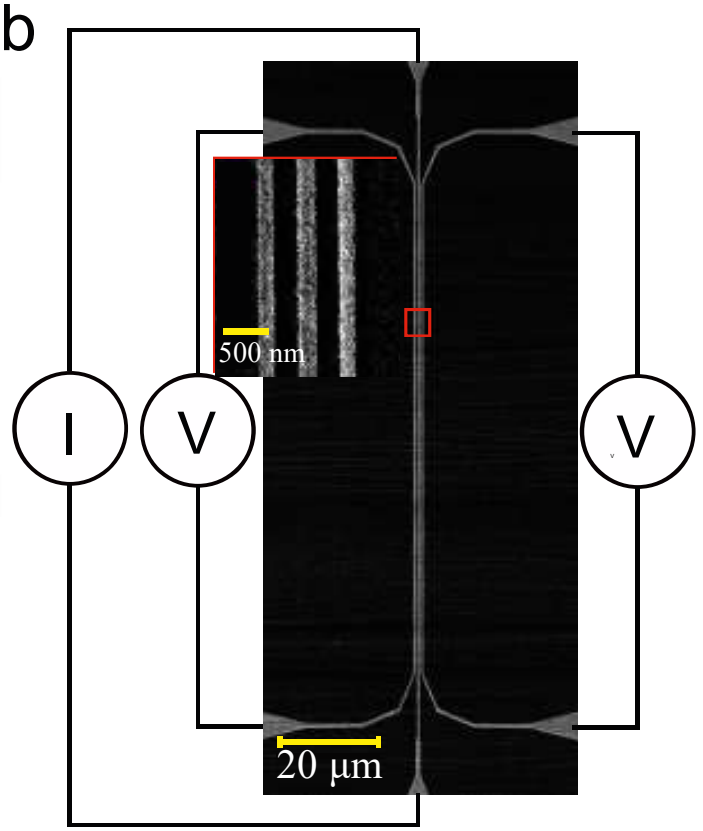


Local and Global Transport Excitation Spectroscopy



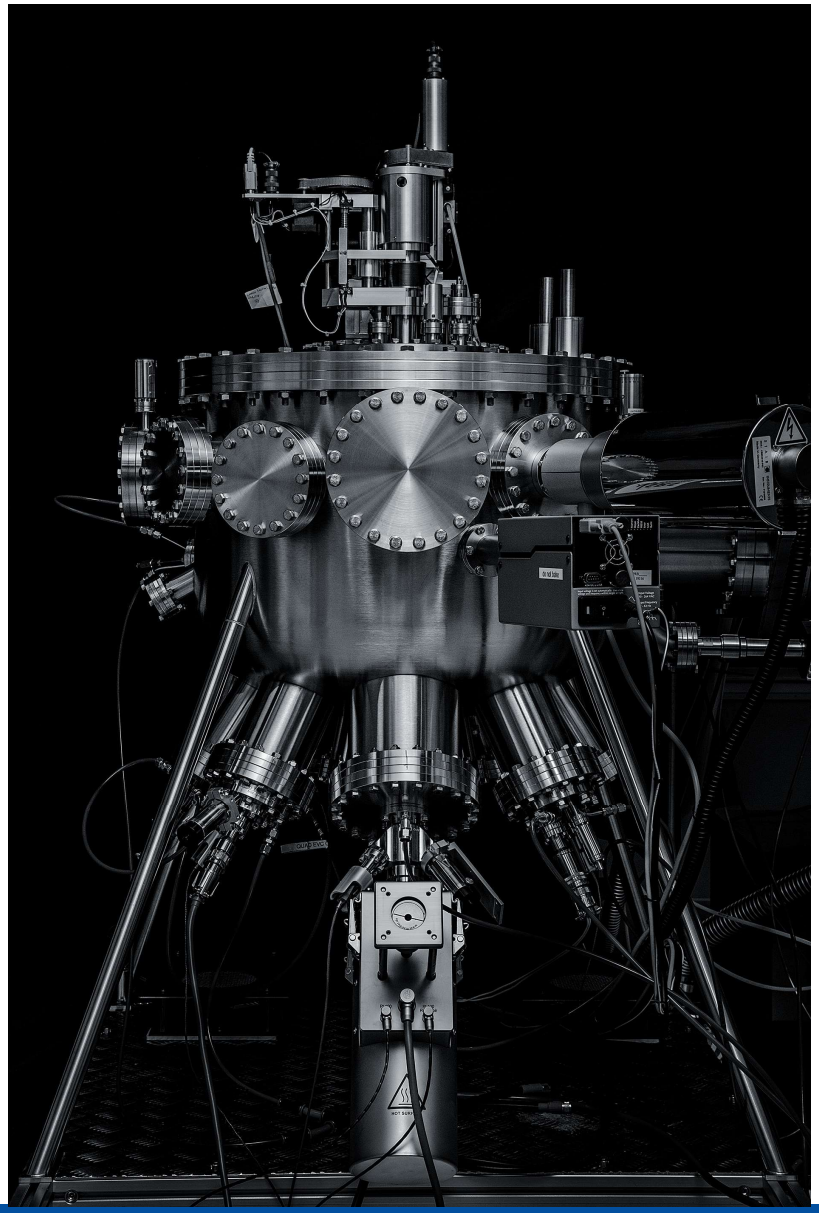
Høydepunkter





R. Lebrun et al «Tunable long-distance spin transport in a crystalline antiferromagnetic iron oxide», Nature 561, 222-225 (2018)

Høydepunkter



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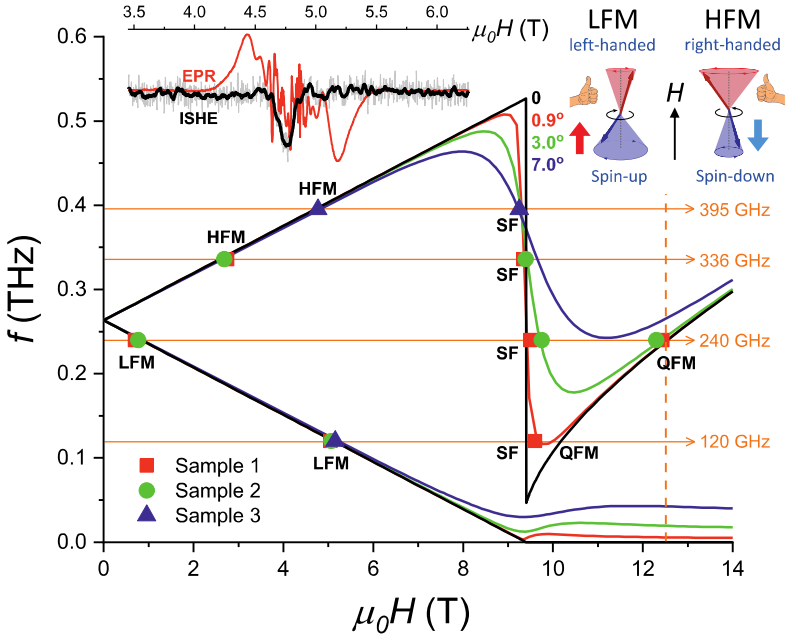
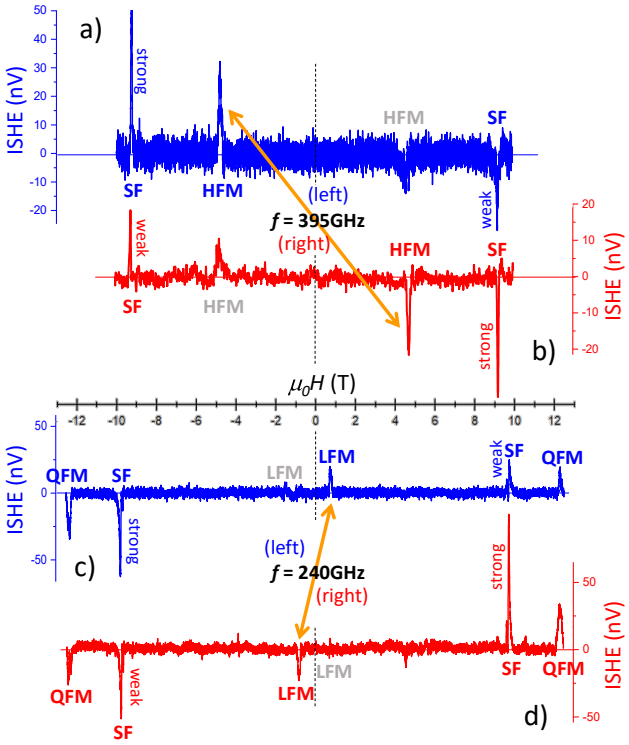




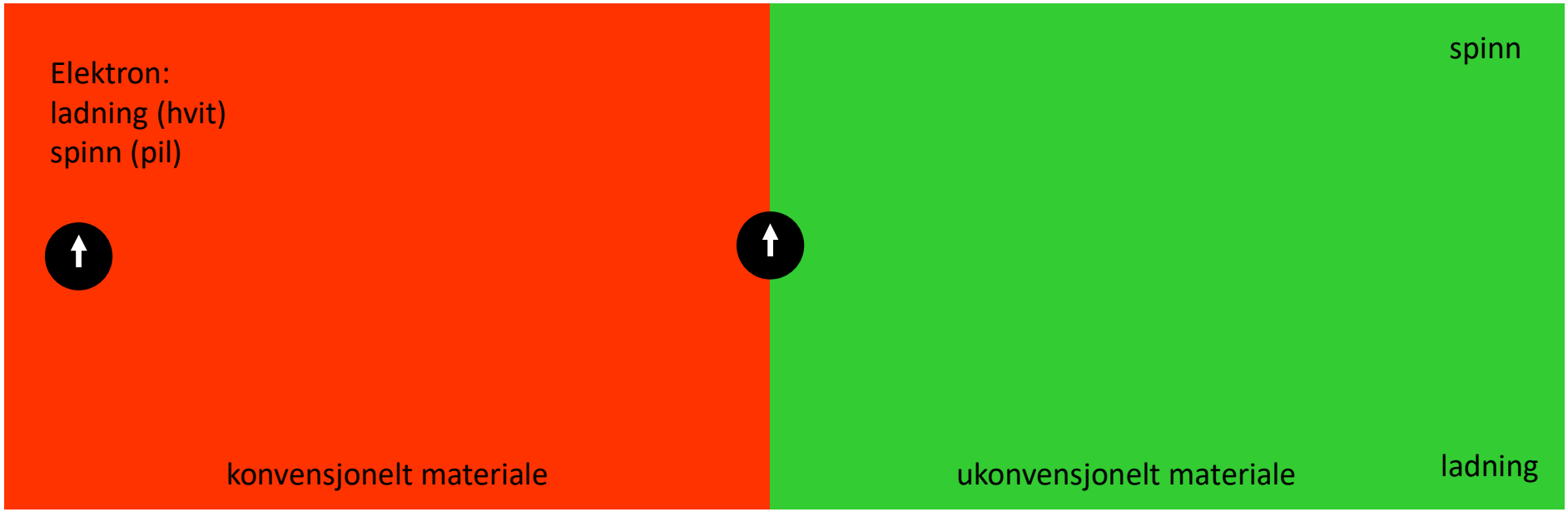
Vaidya et al “Sub-Terahertz Spin-Pumping from an Insulating Antiferromagnet”, Science (2020)

Konvensjonell spinntronikk

- Ladning og spinn beveger seg sammen

QuSpin – uvanlige fenomener

- Spinn beveger seg uavhengig av ladning



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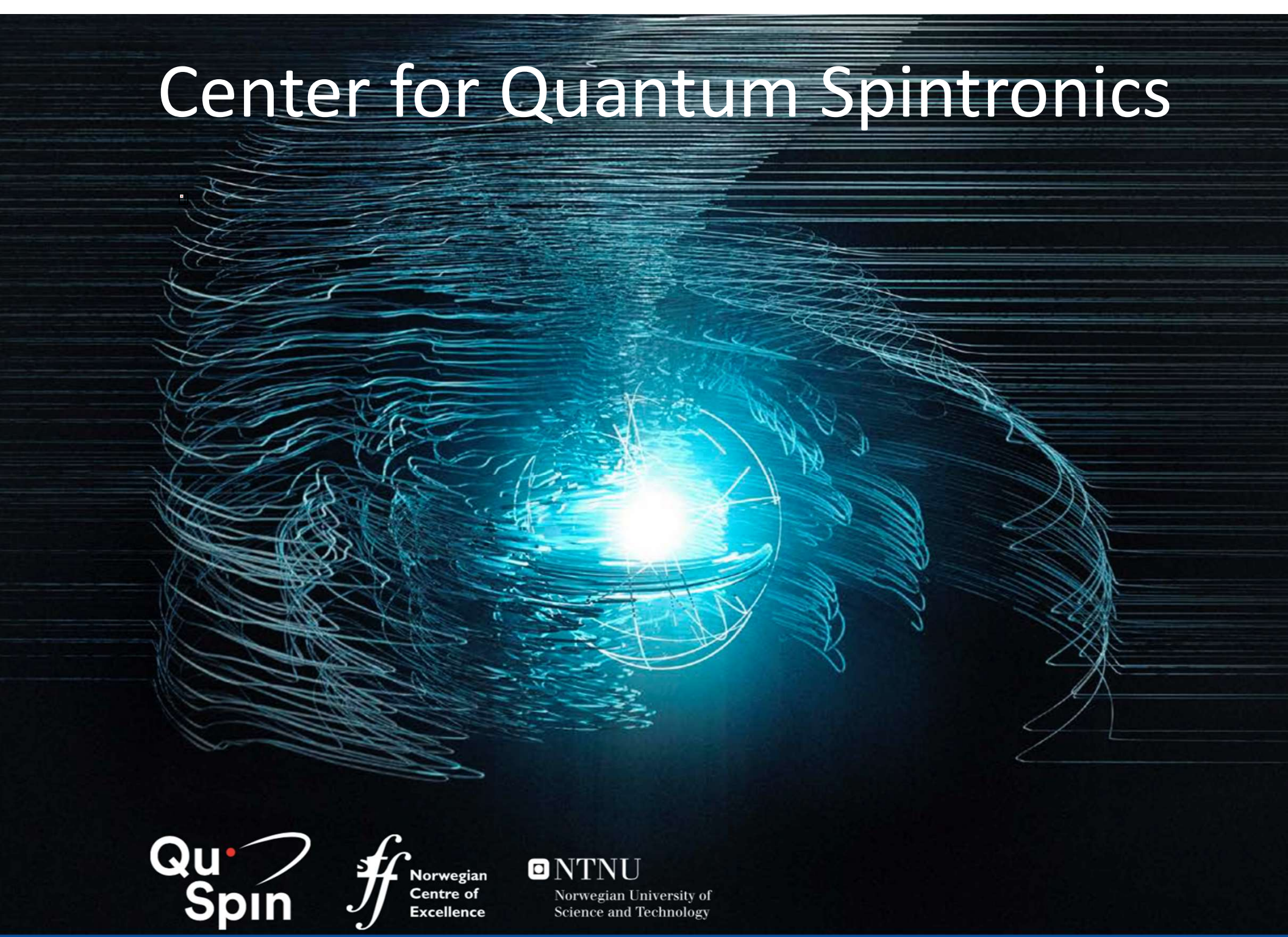

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