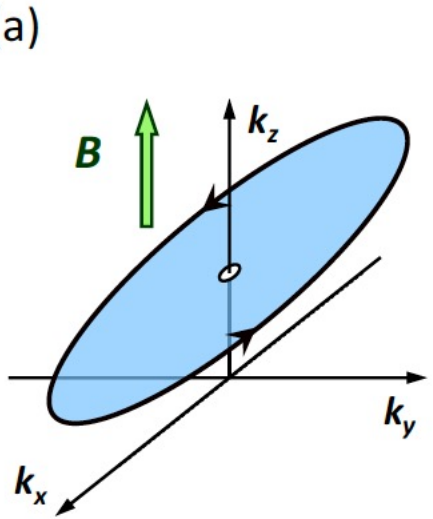
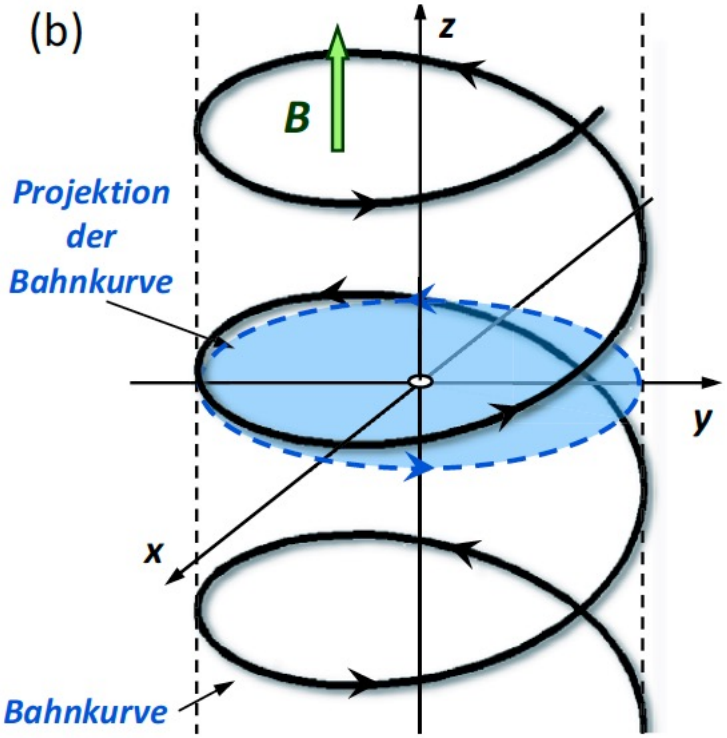
Bandstruktur und Fermi Flächen

1. Elektronen im Magnetfeld
2. Zyklotronresonanz
3. De Haas-van Alphen Effekt
4. Experimentelle Bestimmung der Bandstruktur

Semiklassische Bewegung im homogenen Magnetfeld



Trajektorien im k-Raum



Ortsraum-Bahnkurven

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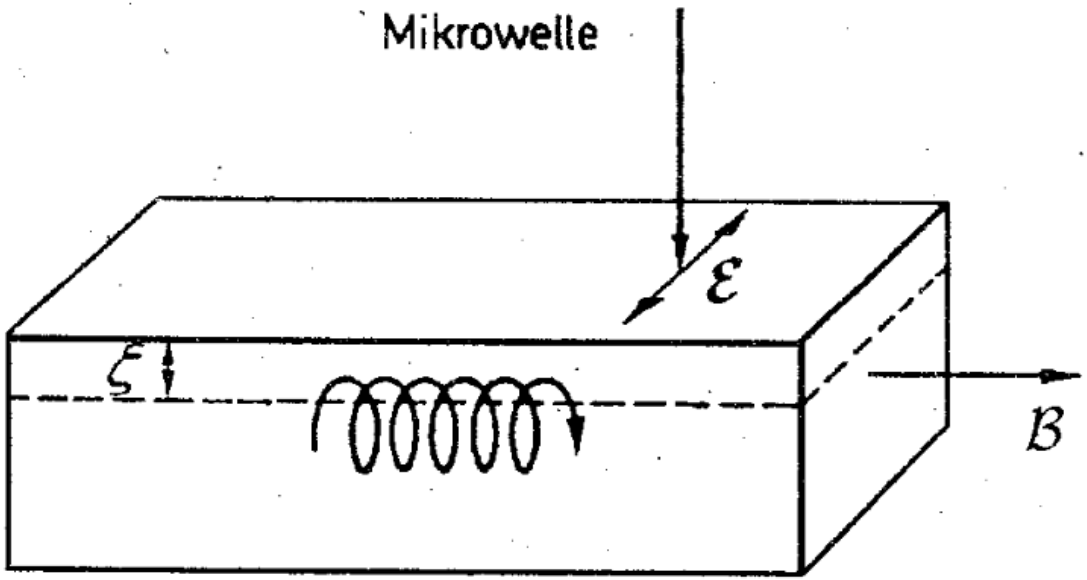
Zyklotronresonanzmessungen



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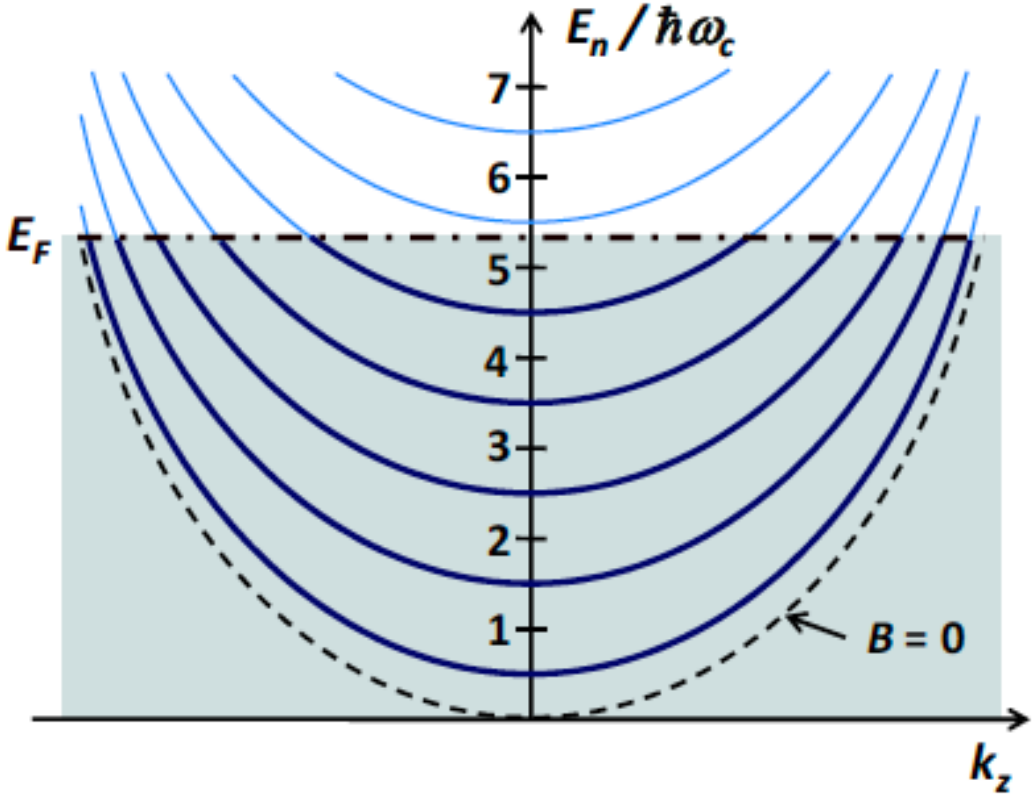
Elektronenenergie im Magnetfeld



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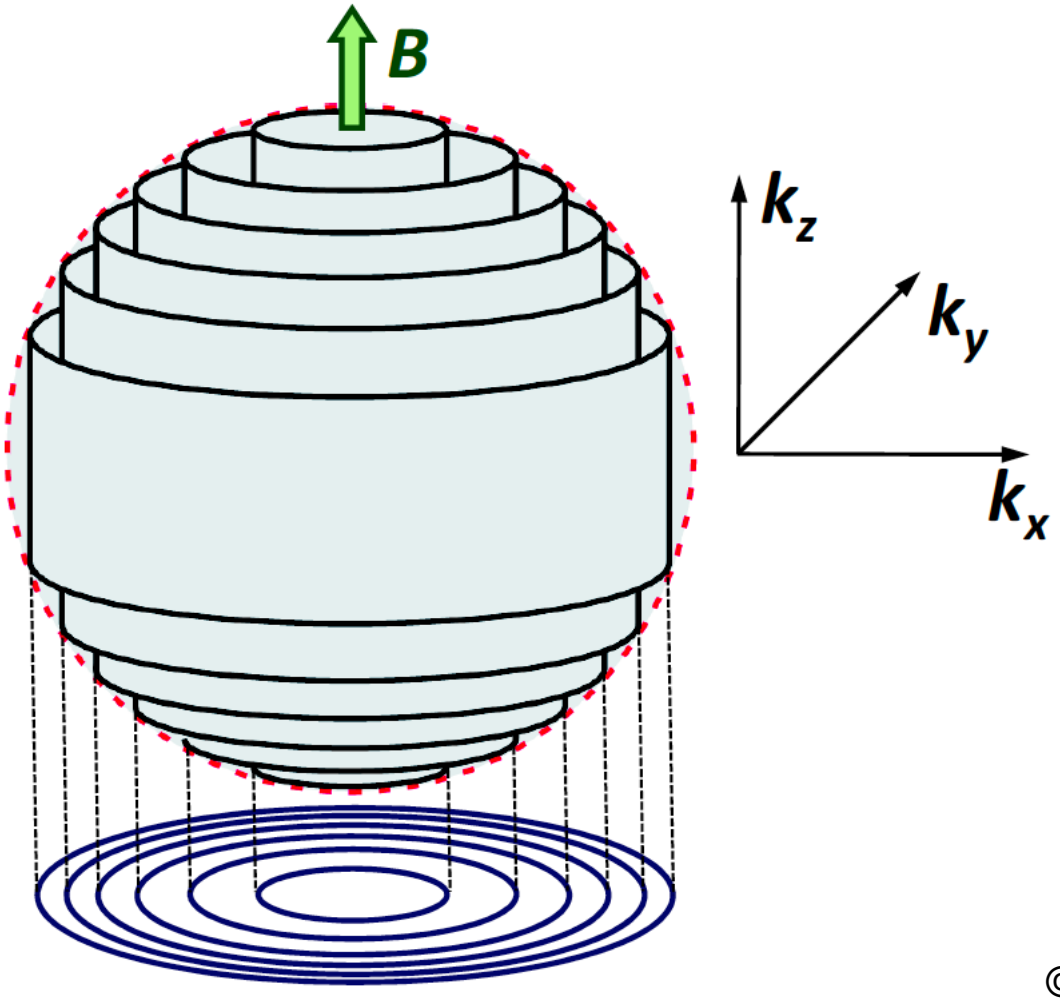
Landau-Zylinder für freie Elektronen



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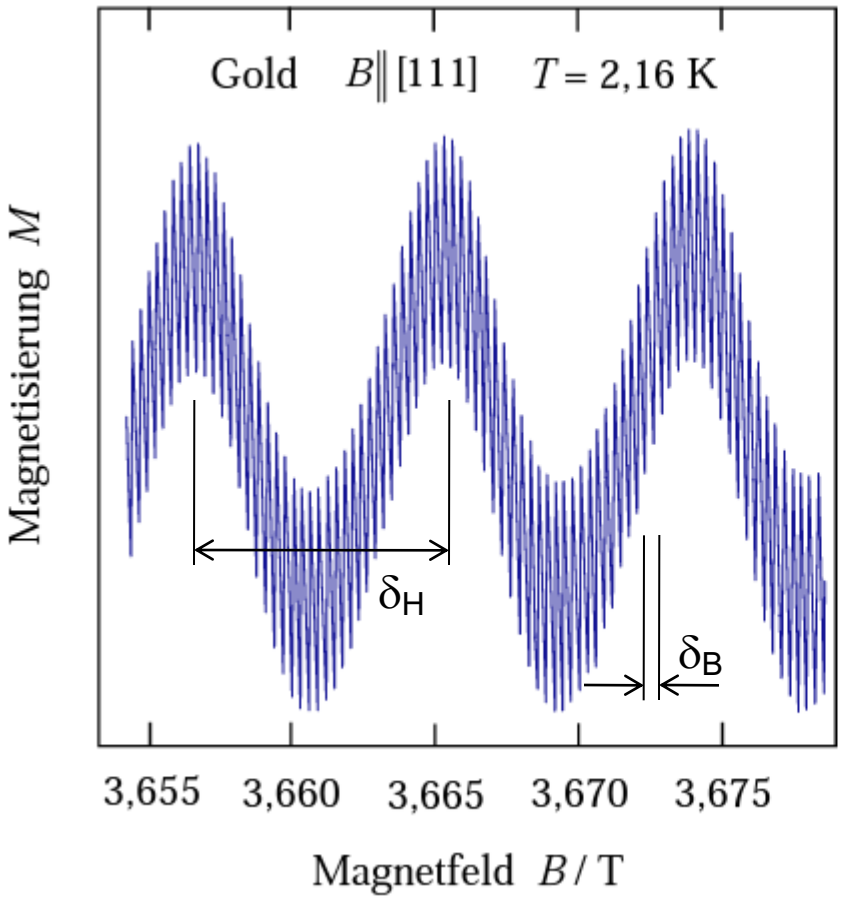
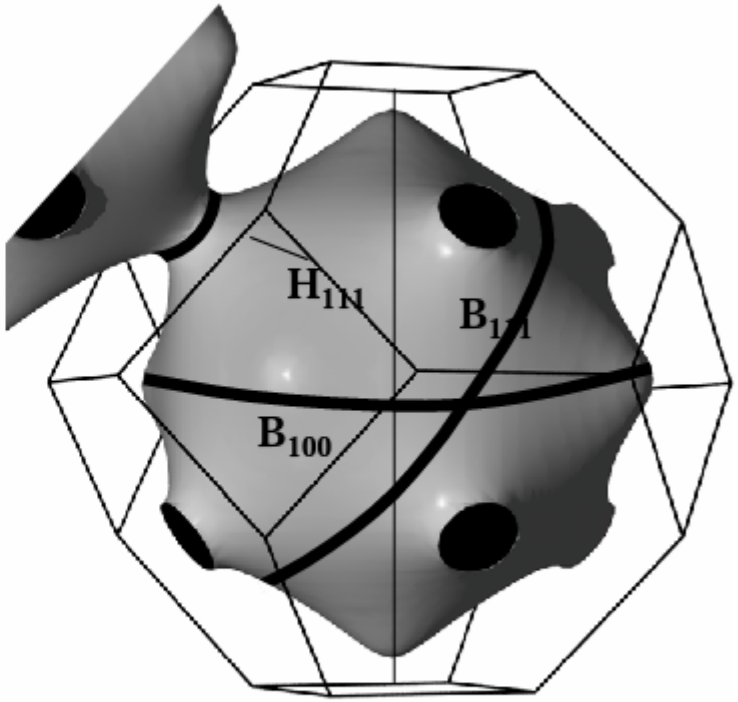
De-Haas-van-Alphén-Effekt in Au





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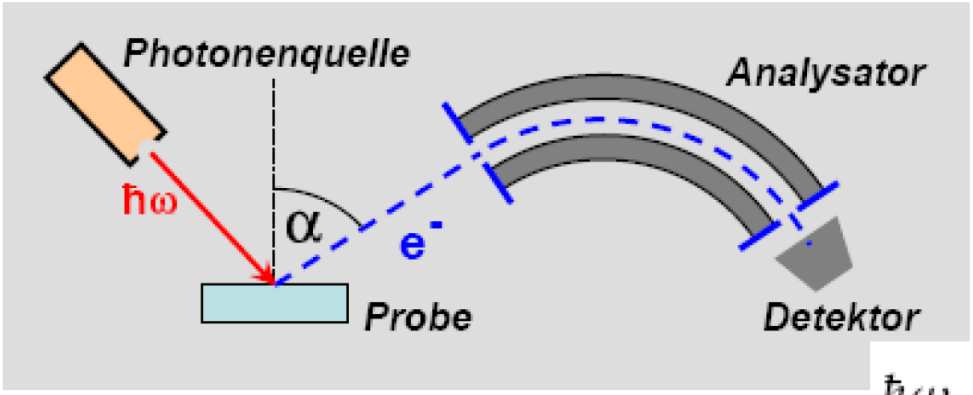
Angle-resolved photoemission spectroscopy (APRES)

Experimenteller Aufbau:



Austrittsarbeit

$$\hbar\omega = \phi + E_{\mathrm{kin}} + E_b$$

Bindungsenergie