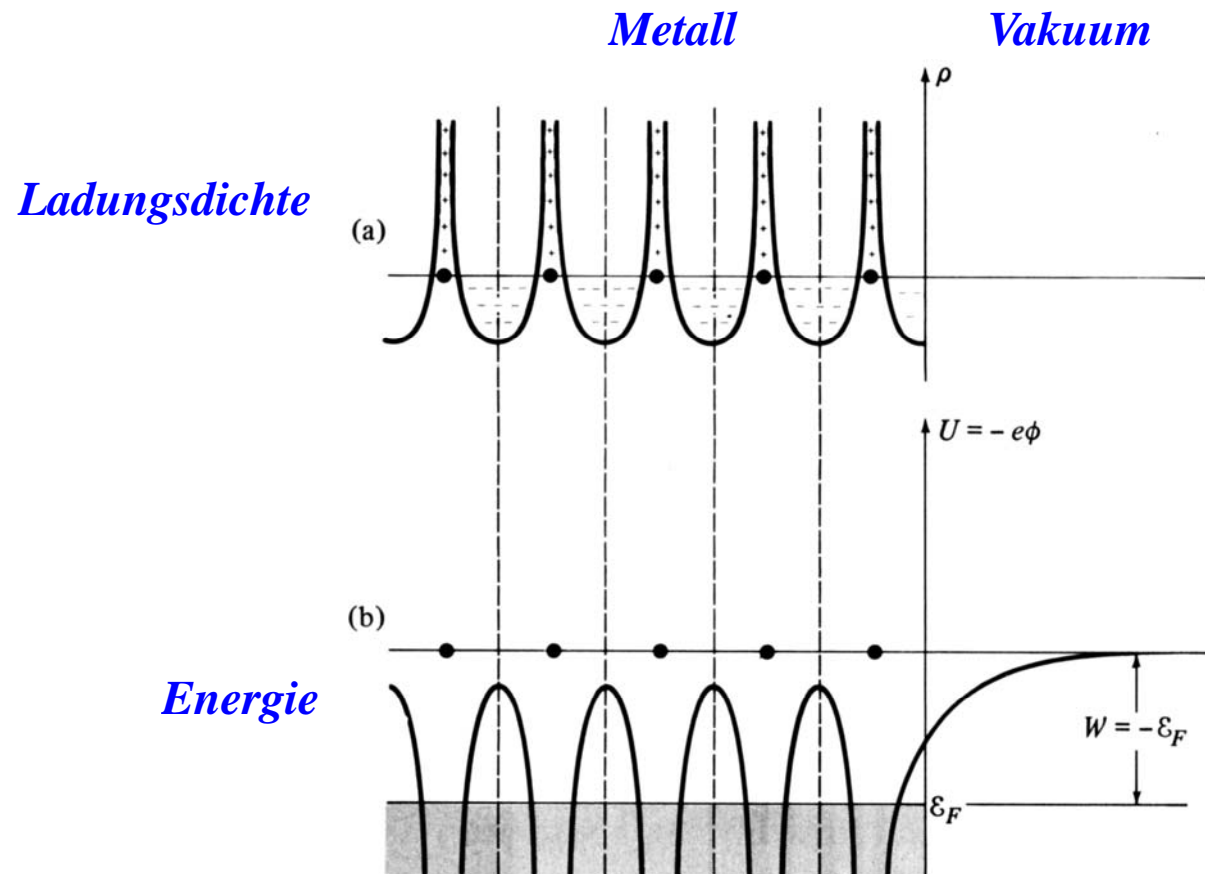


# Oberflächenphysik

## Austrittsarbeit (work function)

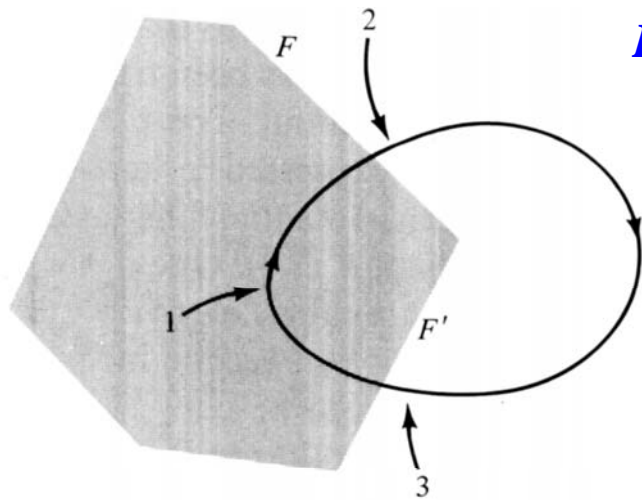


(Quelle: Ashcroft, Mermin, Solid State Physics, Saunders, Philadelphia)

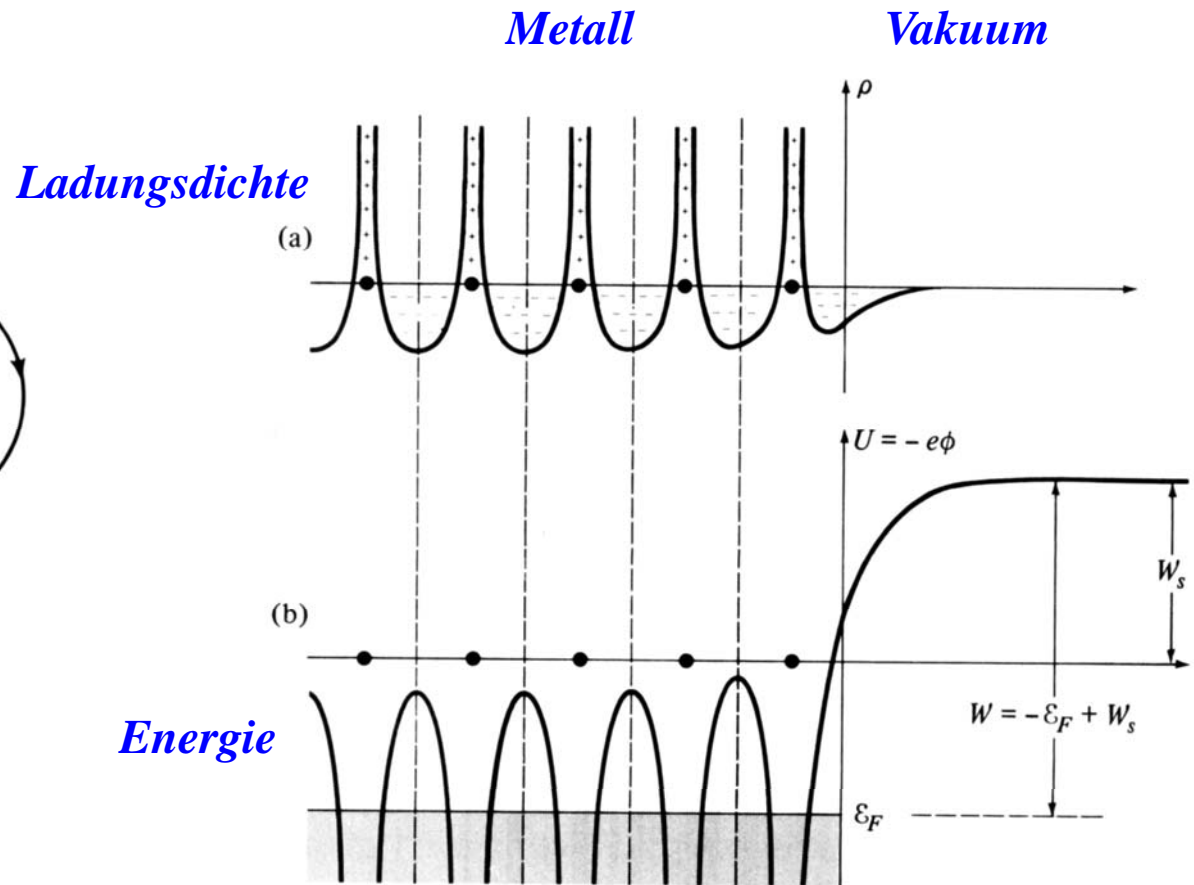
# Oberflächenphysik

## Austrittsarbeit (work function)

Modell für den Nachweis unterschiedlicher Oberflächenpotentiale



Energie- und Ladungsdichteverlauf



# Oberflächenphysik

## Austrittsarbeit einiger Metalle

### WORK FUNCTIONS OF TYPICAL METALS

METAL	$W$ (eV)	METAL	$W$ (eV)	METAL	$W$ (eV)
Li	2.38	Ca	2.80	In	3.8
Na	2.35	Sr	2.35	Ga	3.96
K	2.22	Ba	2.49	Tl	3.7
Rb	2.16	Nb	3.99	Sn	4.38
Cs	1.81	Fe	4.31	Pb	4.0
Cu	4.4	Mn	3.83	Bi	4.4
Ag	4.3	Zn	4.24	Sb	4.08
Au	4.3	Cd	4.1	W	4.5
Be	3.92	Hg	4.52		
Mg	3.64	Al	4.25		

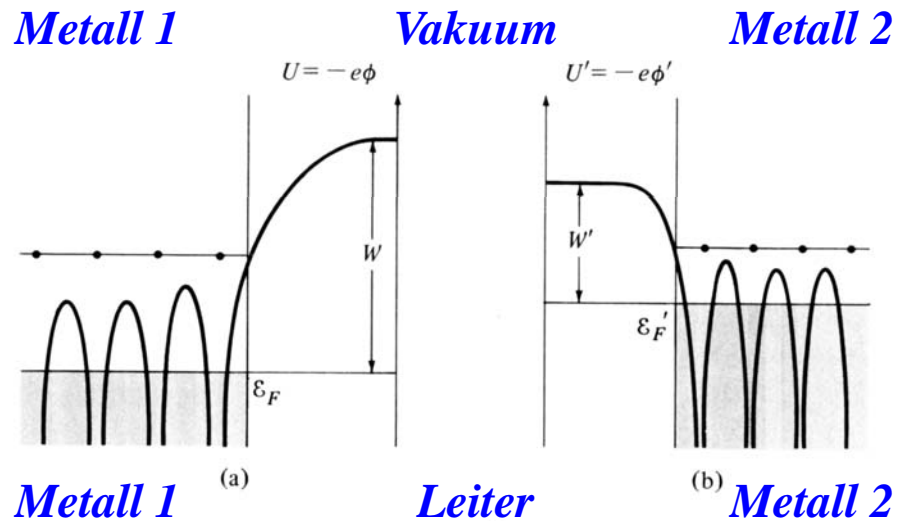
Source: V. S. Fomenko, *Handbook of Thermionic Properties*, G. V. Samsanov, ed., Plenum Press Data Division, New York, 1966. (Values given are the author's distillation of many different experimental determinations.)

(Quelle: Ashcroft, Mermin, *Solid State Physics*, Saunders, Philadelphia)

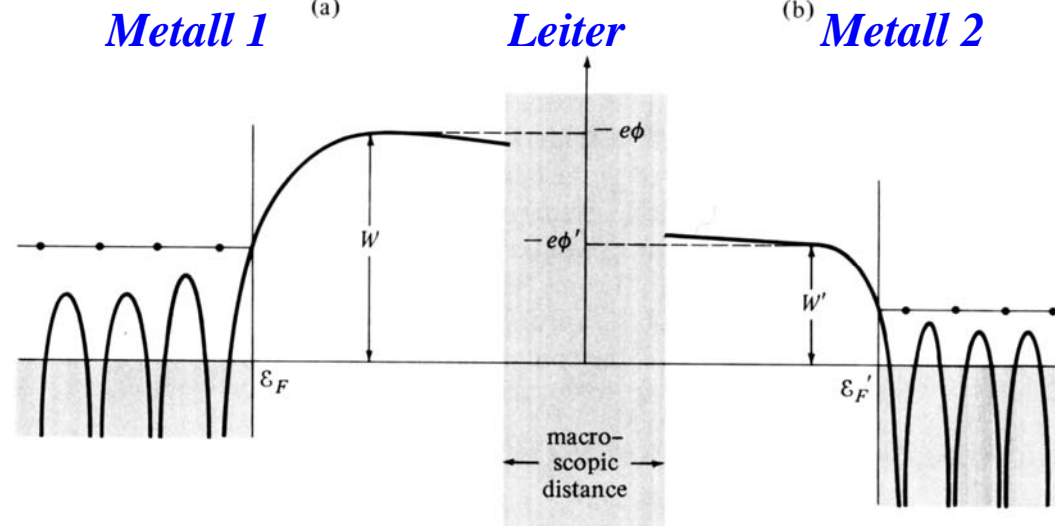
# Oberflächenphysik

## Kontakt-Potential (contact potential)

*Metalle getrennt*



*Metalle verbunden durch Leiter*



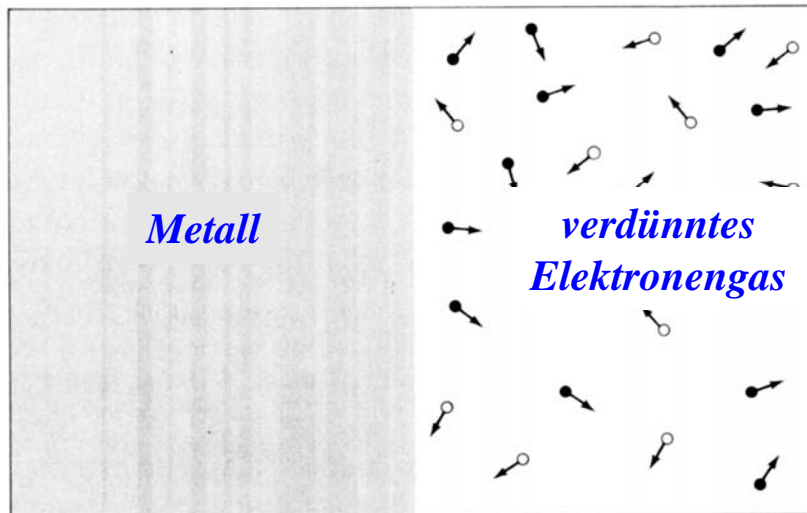
(Quelle: Ashcroft, Mermin, Solid State Physics, Saunders, Philadelphia)

# Oberflächenphysik

## Kontakt-Potential (contact potential)

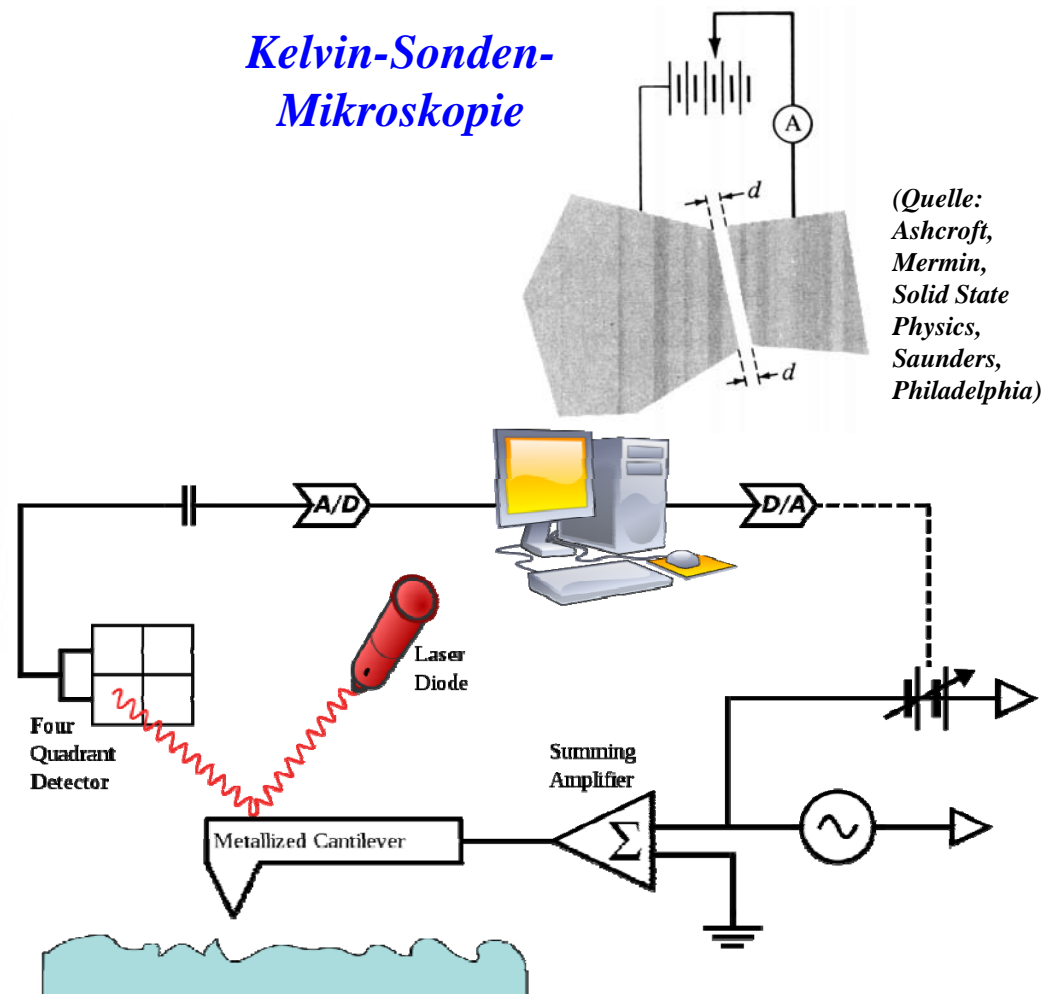
### Messmethoden

#### Glühemission von Elektronen



(Quelle: Ashcroft, Mermin, Solid State Physics, Saunders, Philadelphia)

#### Kelvin-Sonden-Mikroskopie

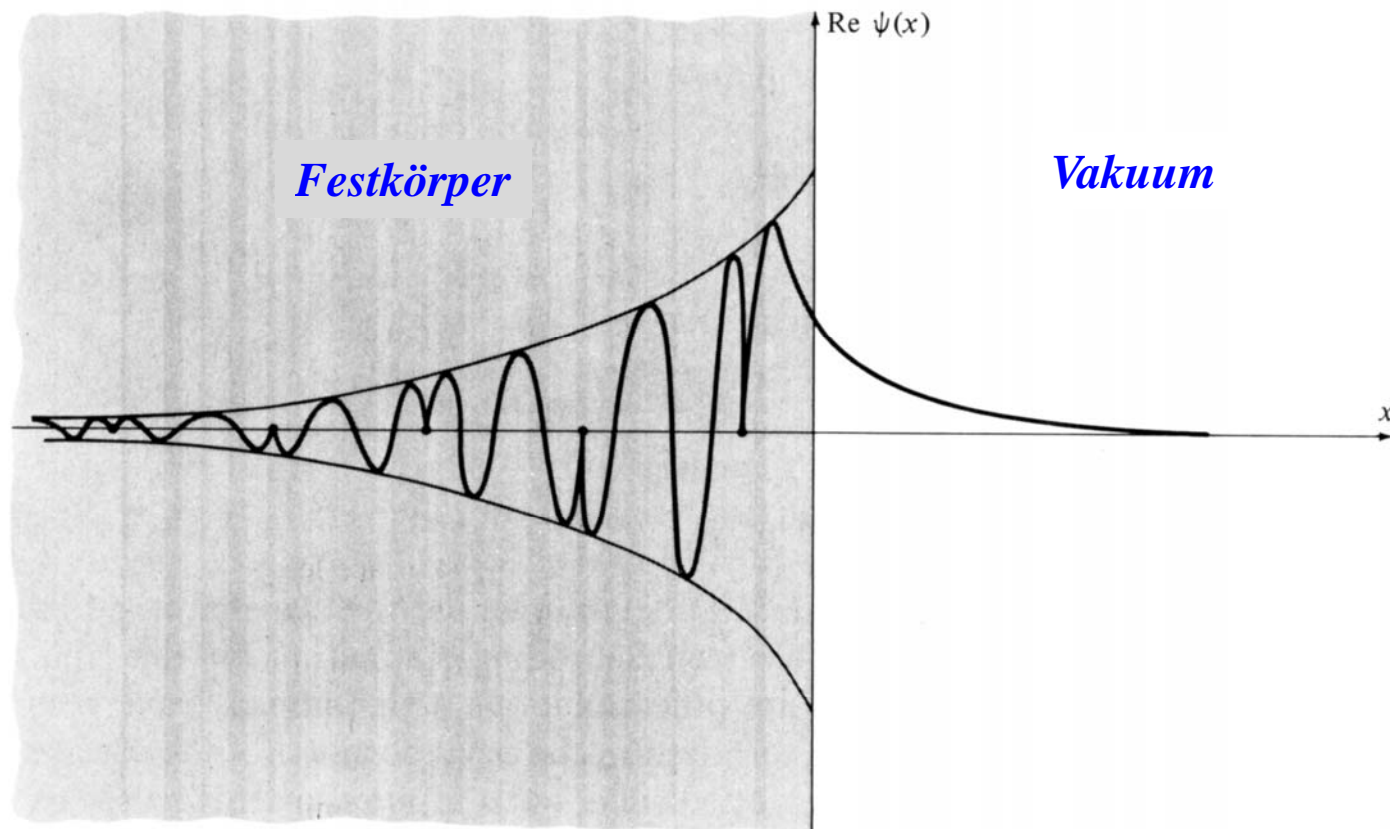


(Quelle: Ashcroft, Mermin, Solid State Physics, Saunders, Philadelphia)

(Quelle: de.wikipedia.org/wiki/Kelvin-Sonde)

# Oberflächenphysik

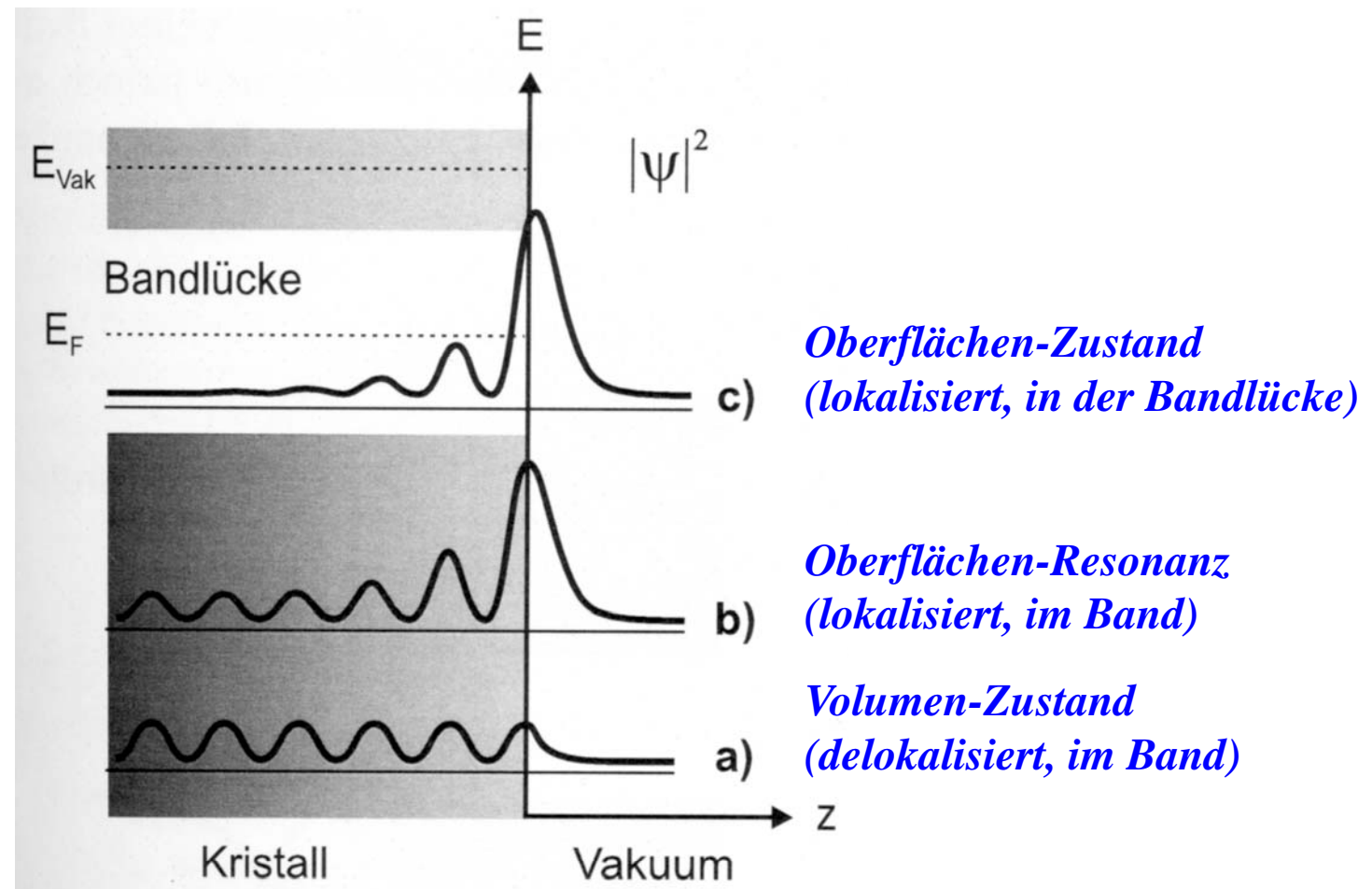
## Oberflächenzustand



(Quelle: Ashcroft, Mermin, *Solid State Physics*, Saunders, Philadelphia)

# Oberflächenphysik

## Oberflächen-Zustand und -Resonanz

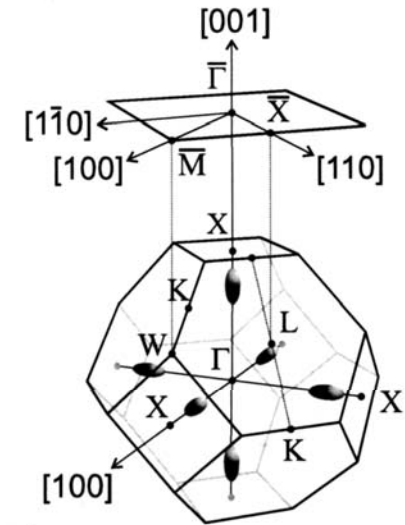
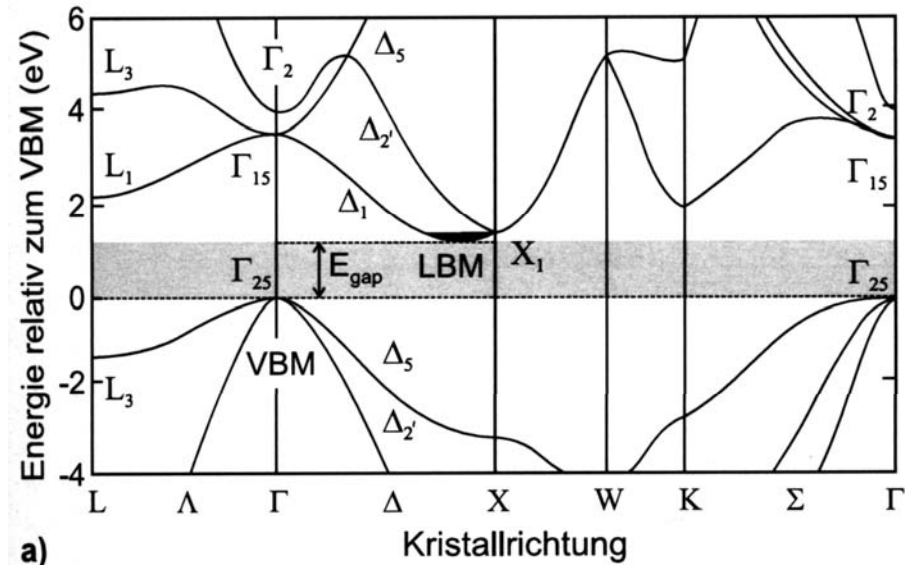


(Quelle: C. Eickhoff, Dissertation FU Berlin 2010)

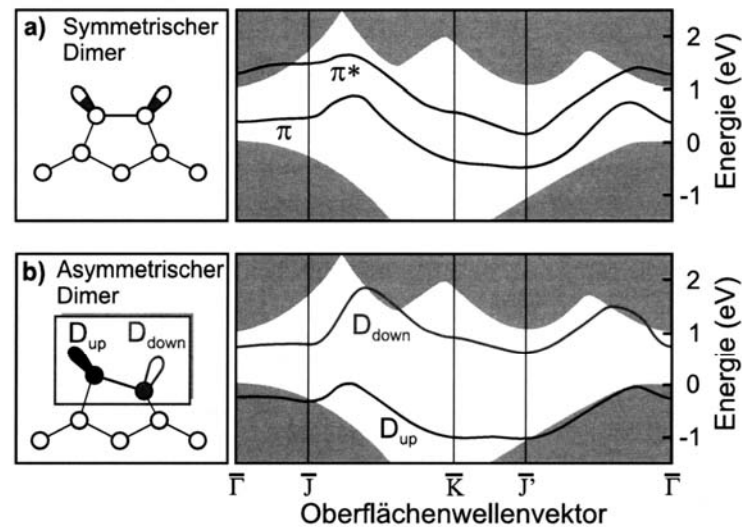
# Oberflächenphysik

## Oberflächenbandstruktur von Si(001)

*Volumenbandstruktur und  
Oberflächennetz  
von Si(001)*



*Oberflächenbandstruktur Si(001)*



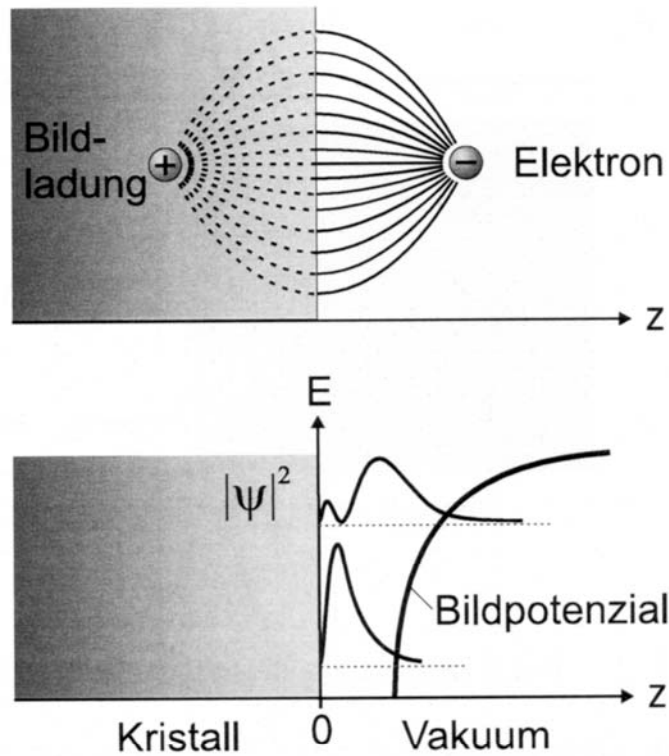
*(Quelle: C. Eickhoff,  
Dissertation FU Berlin 2010)*



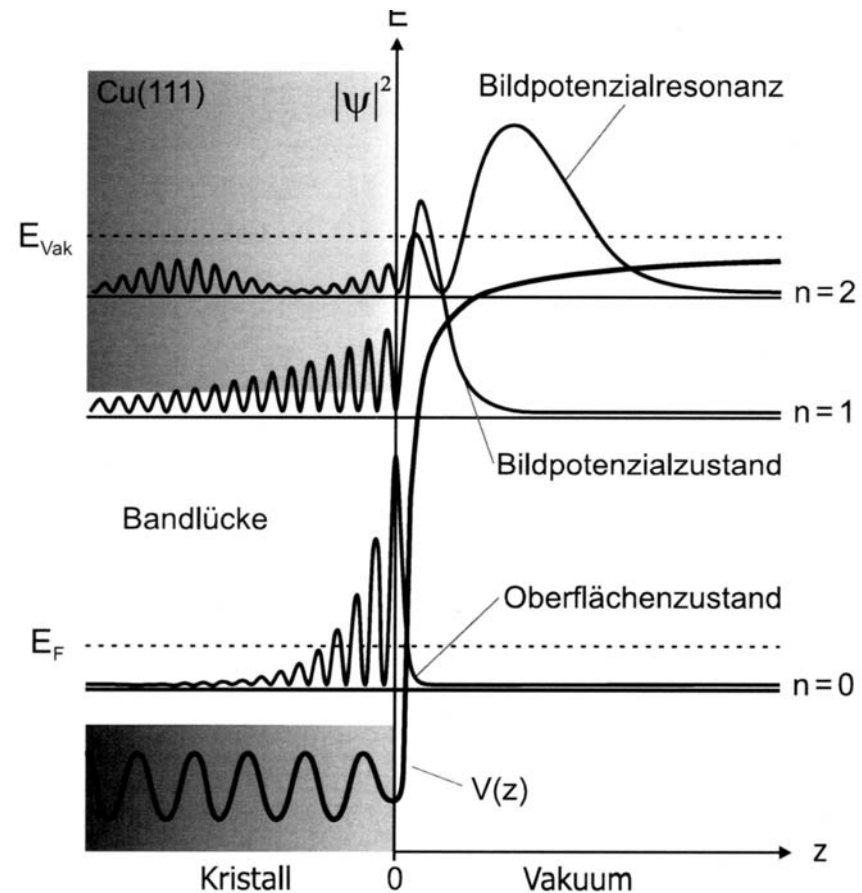
# Oberflächenphysik

## Bildpotential-Zustand und -Resonanz (image potential state / resonance)

*Modell*



*Vergleich mit Oberflächen-Zustand/-Resonanz*



(Quelle: C. Eickhoff, Dissertation FU Berlin 2010)