

Entdeckung neutraler schwacher Stroeme: Gargamelle Blasenkammer am CERN

13.5 t CF_3Br „Freon“ dichte Fluessigkeit, bietet viel Masse fuer

Neutrinowechselwirkungswahrscheinlichkeit

gute Wahrscheinlichkeit fuer Photonnachweis

Geladener Strom mit einfallendem Myonantineutrino: immer Myon im Endzustand

Neutraler Strom: $\nu_\mu + \text{Atomkern} \rightarrow \nu_\mu + \text{Hadronen}$

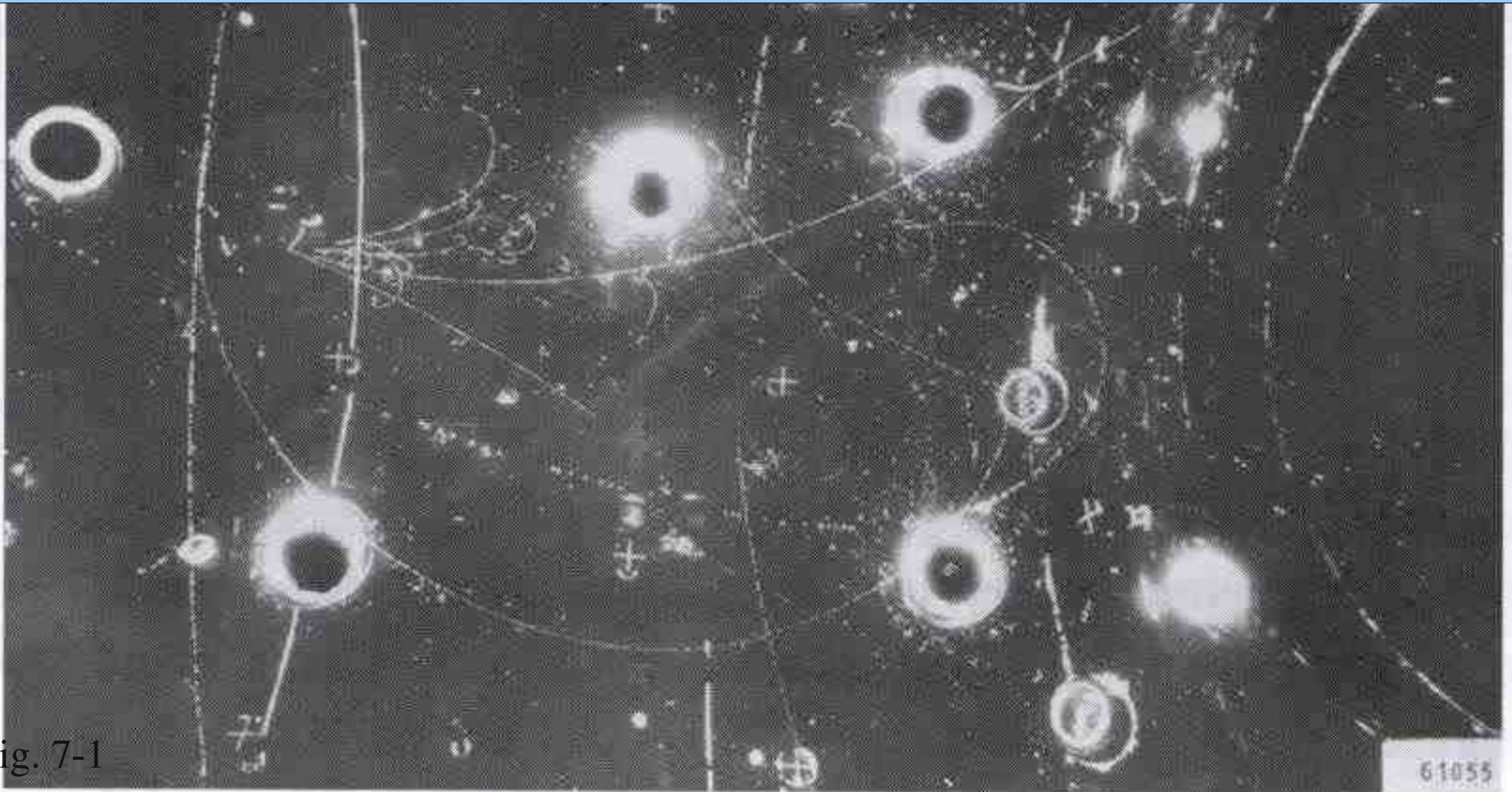
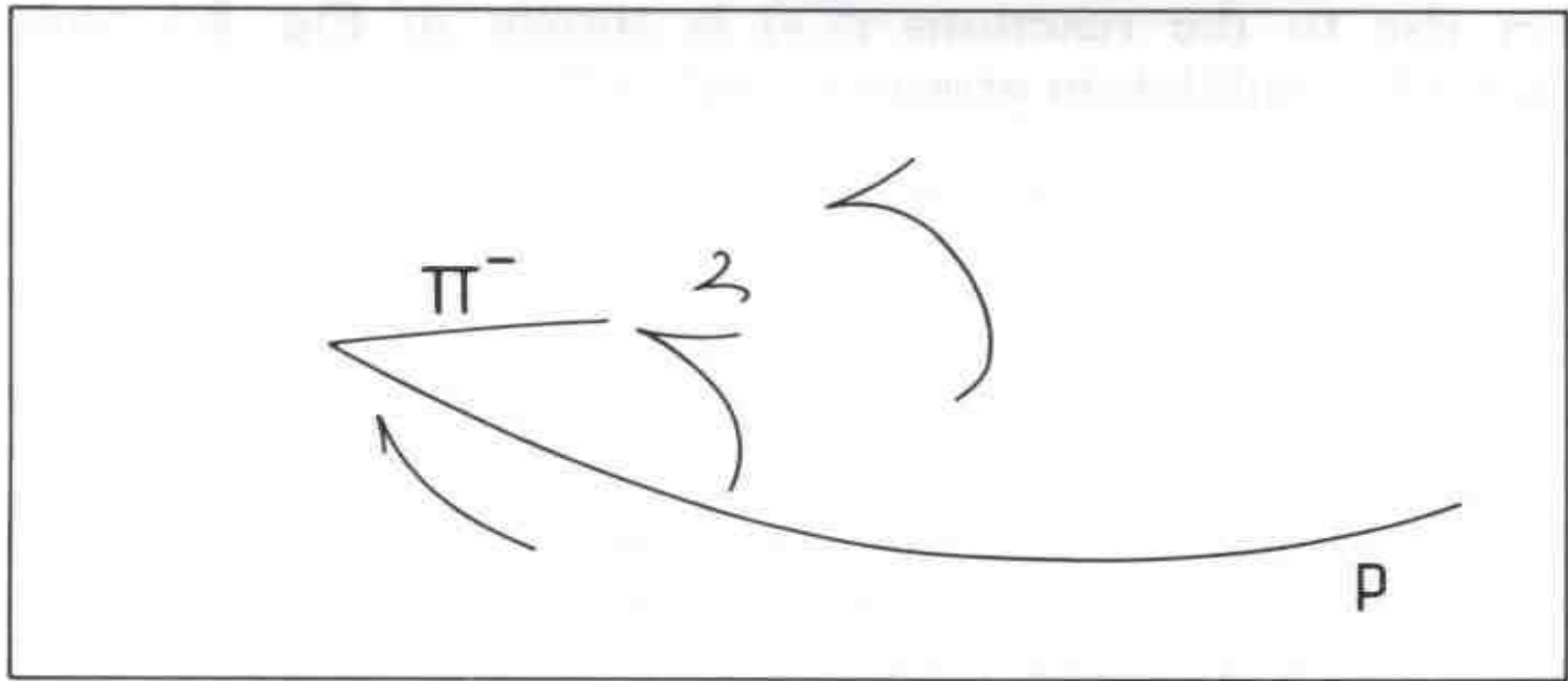
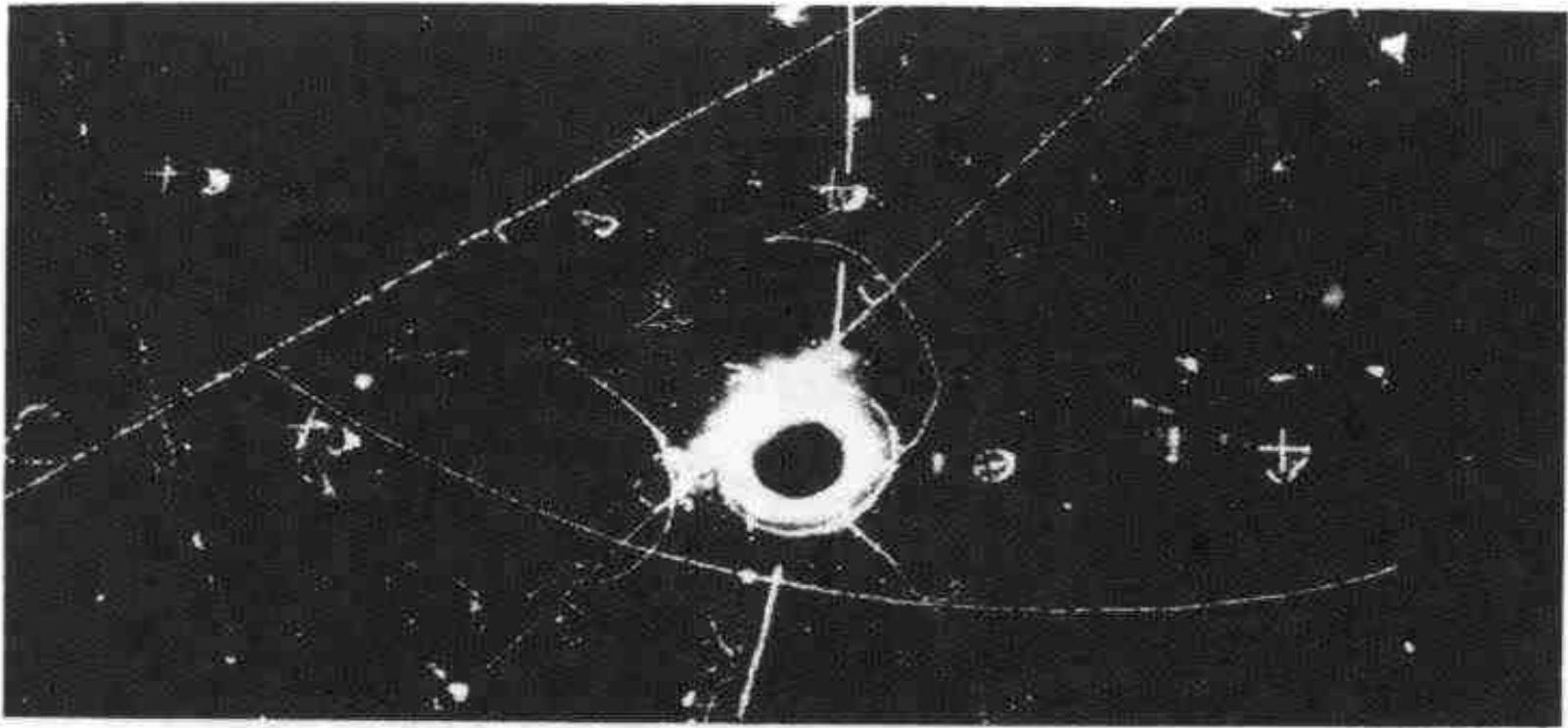
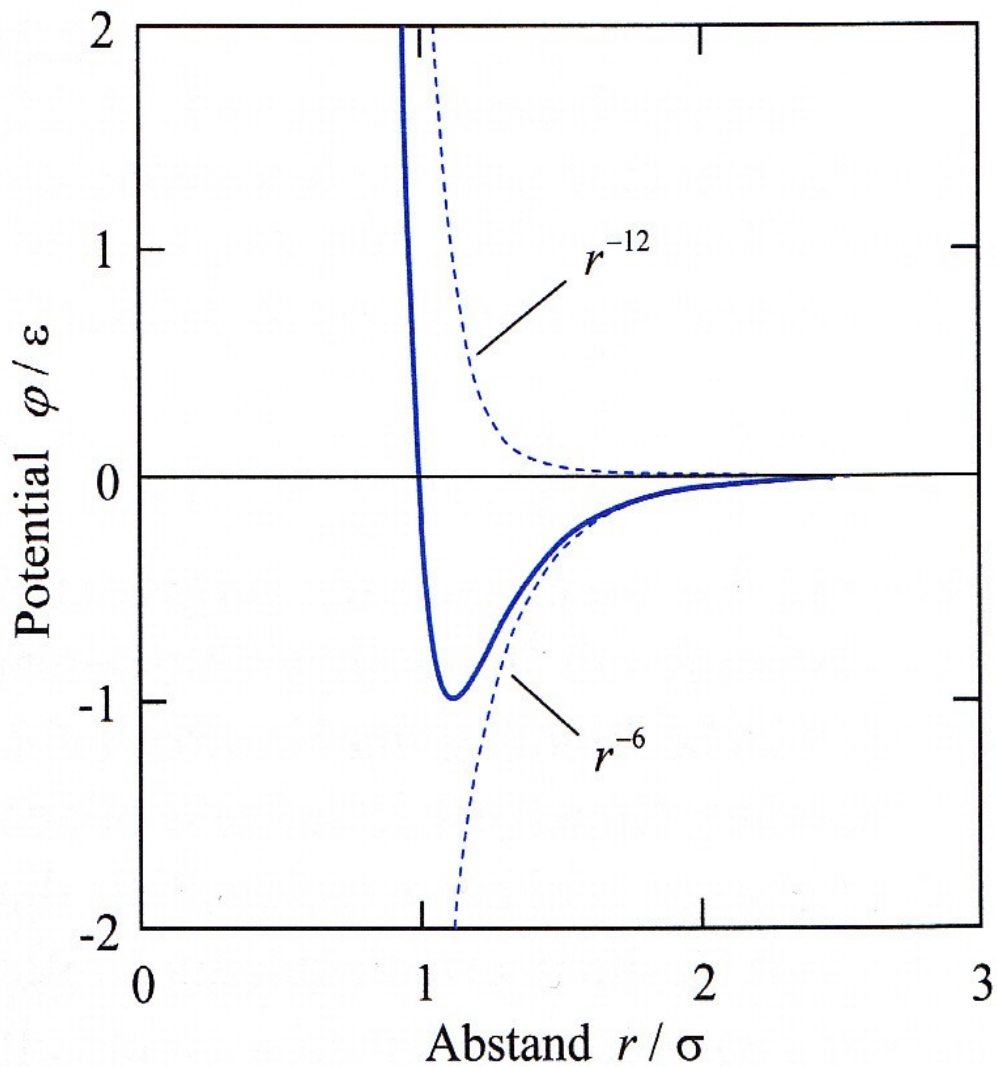


Fig. 7-1





	$\sigma(\text{\AA})$	ϵ (meV)
Ne	2.73	3.1
Ar	3.40	10.4
Kr	3.65	14.1

Bild 2.2: Lennard-Jones-Potential. Der anziehende Teil des Potentials ist proportional zu r^{-6} , der abstoßende proportional zu r^{-12} . Die Parameter ϵ und σ bestimmen die Muldentiefe und den Nulldurchgang des Potentials.

Fig. 1-1

Dichteverteilung von Valenzelektronen in typisch ionischem Kristall

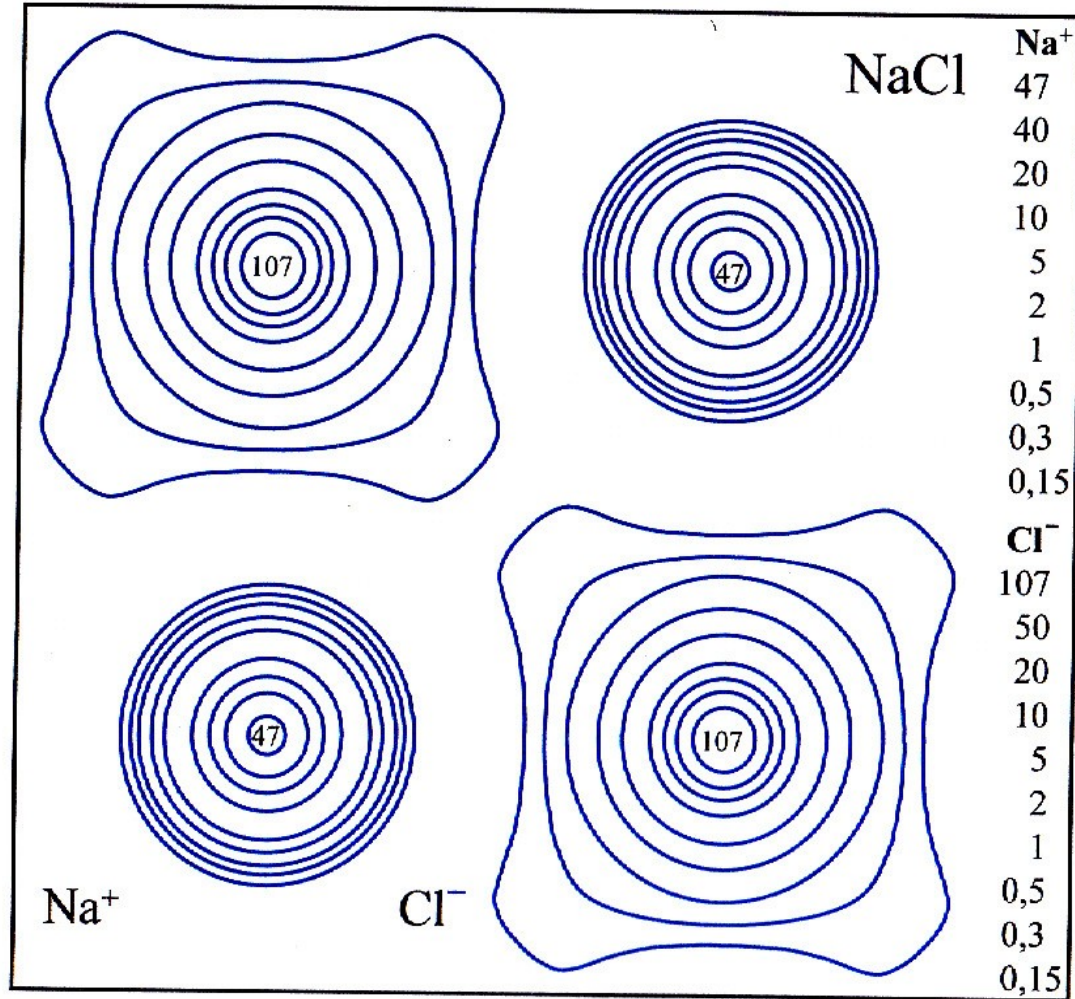


Fig. 1-2

Evjen-Zelle

6 Nachbarn (-) in Abstand R ,
gehören je zu $1/2$ zu neutraler
Zelle

12 Nachbarn (+) in Abstand $\sqrt{2}R$
Gehören je zu $1/4$ zu neutraler
Zelle

8 Nachbarn (-) in Abstand $2R$
gehören je zu $1/8$ zu neutraler
Zelle

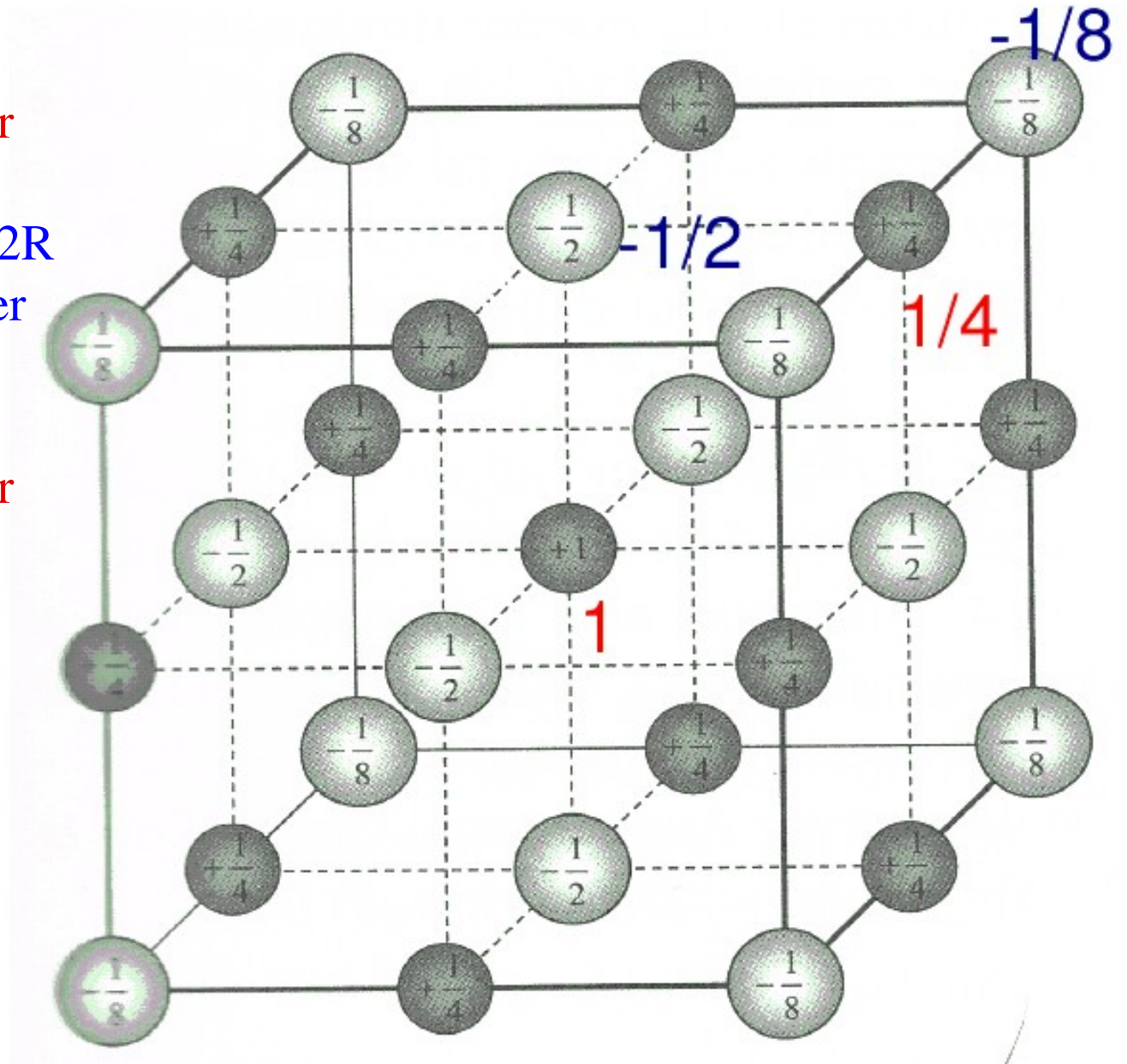


Fig. 1-3

Energieverschiebungen ΔE fuer Spin Singlett und Spin Triplet Wellenfunktionen fuer Wasserstoffmolekuel: bindend bzw. antibindend

--- Naehung fuer sehr grosse Abstaende

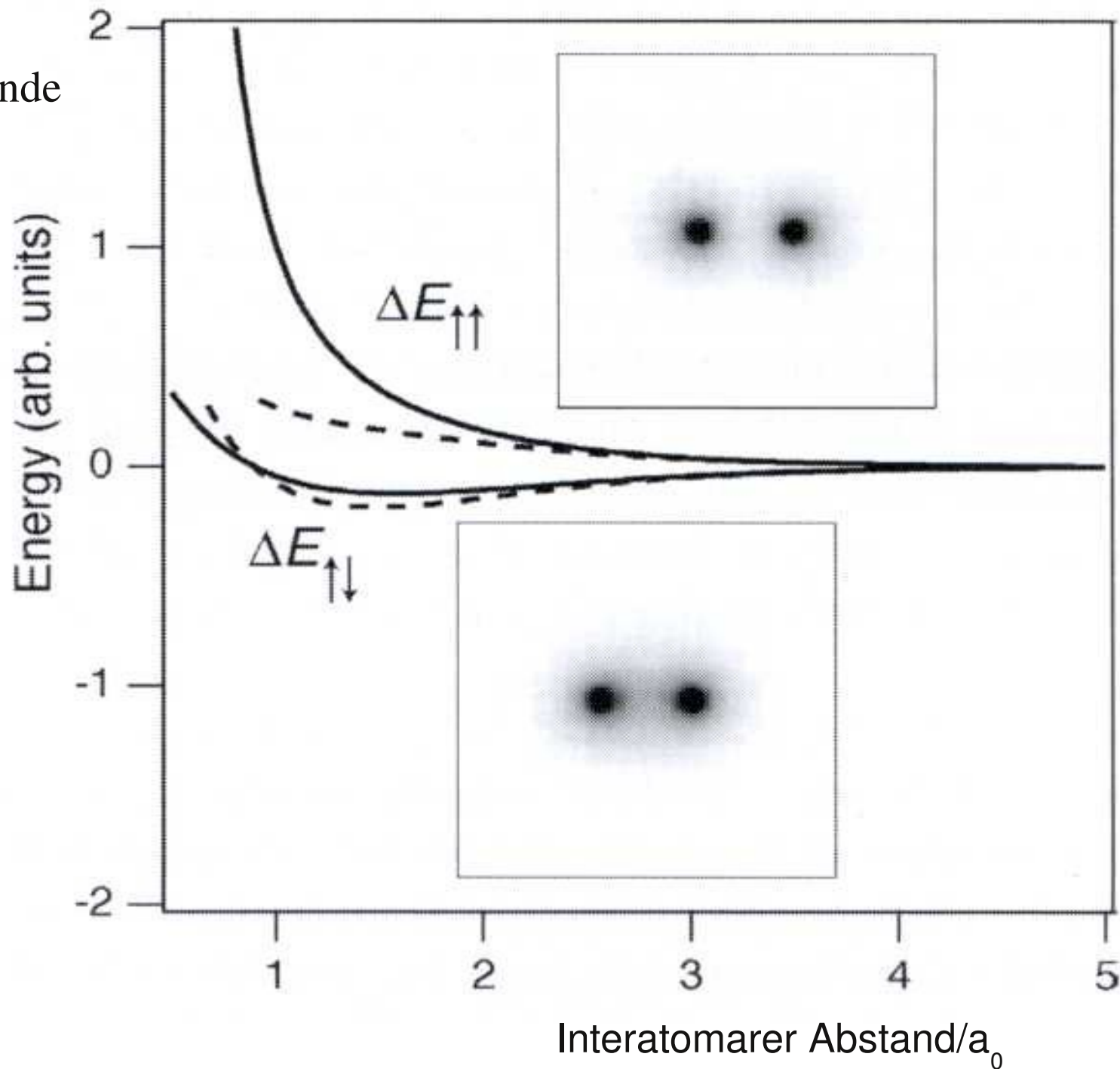
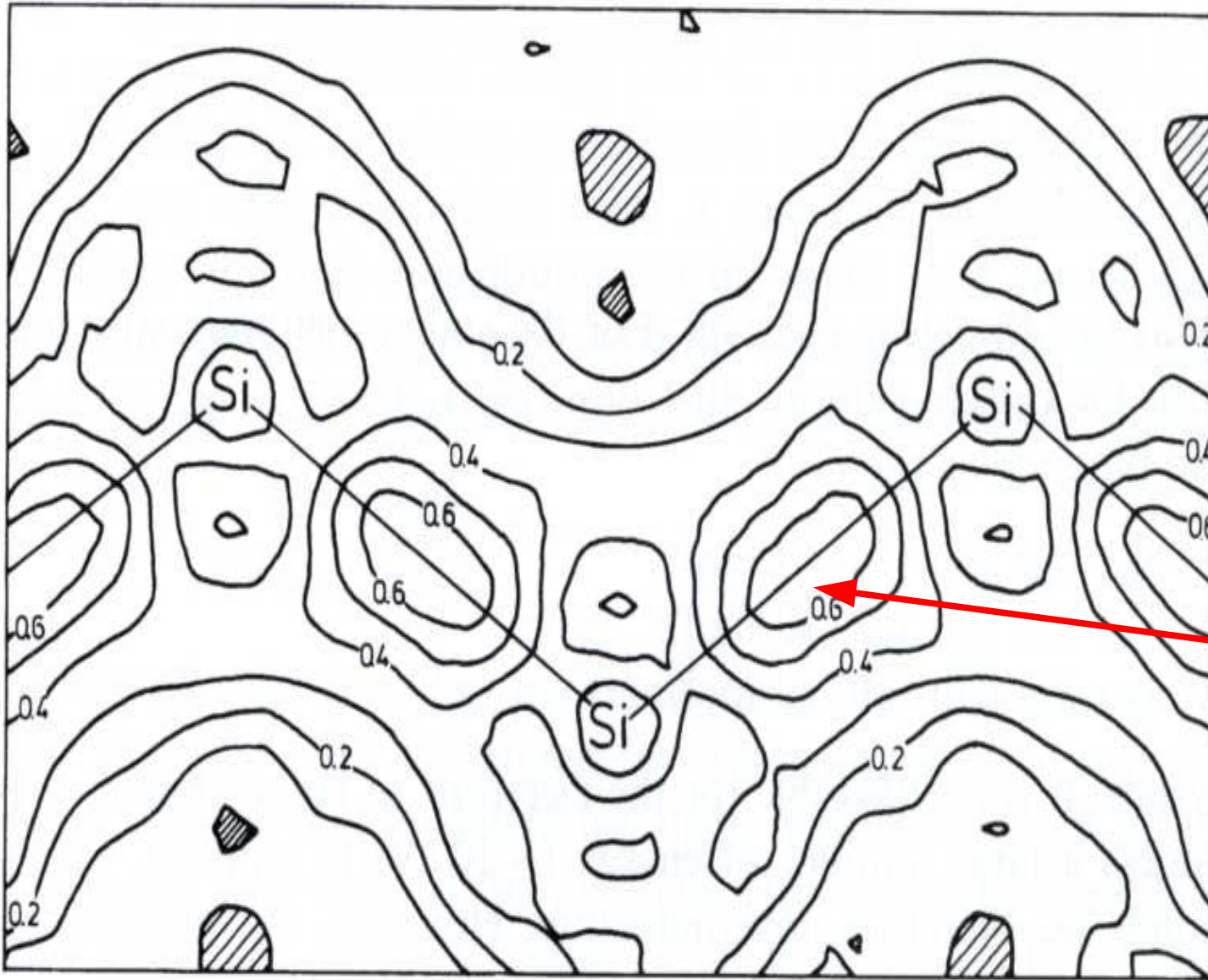


Fig. 1-4

Dichteverteilung von Valenzelektronen in typisch kovalentem Kristall



Maximal zwischen
Atomen, Bindung
gerichtet

Fig. 1-5

Kristallstruktur



Fig. 1-6

Kristallstruktur: Abstraktion – **Basis** und Punktgitter



Fig. 1-7

Kristallstruktur: Punktgitter – Fundamentale Translationen

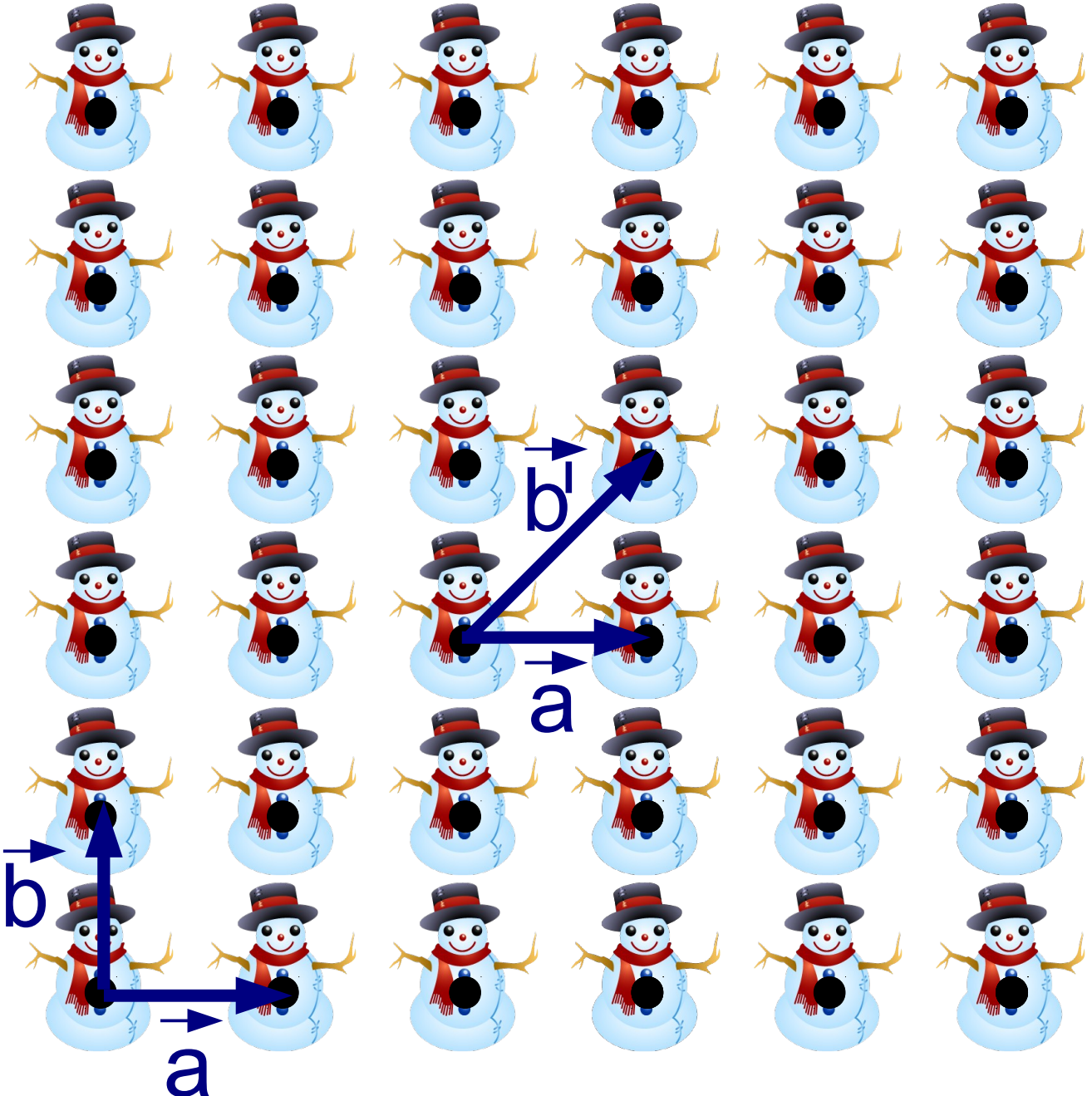


Fig. 1-8

Kristallstruktur: Punktgitter – primitive und nicht primitive Elementarzellen

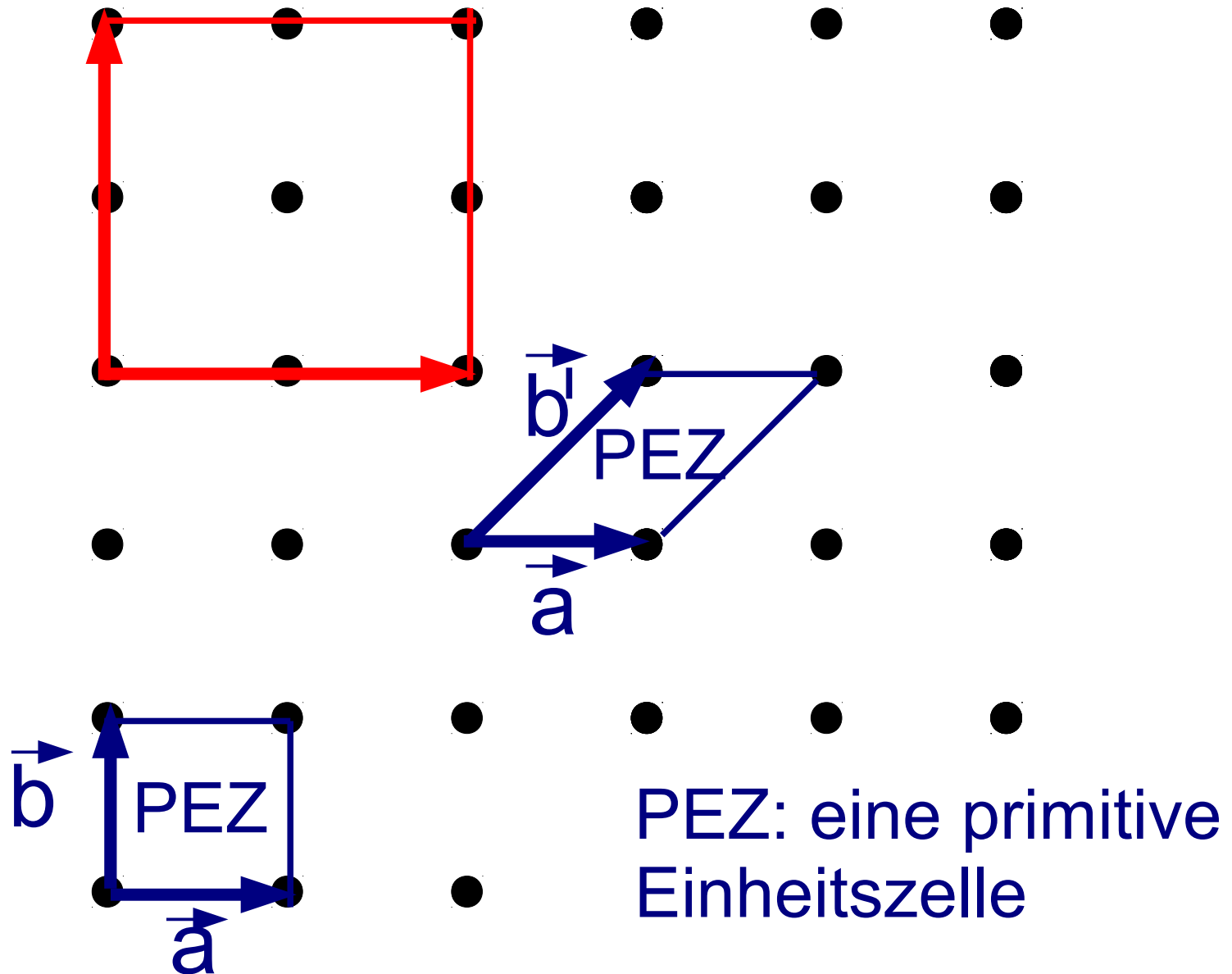
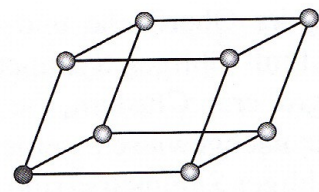
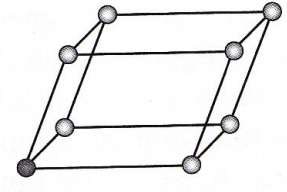


Fig. 1-9

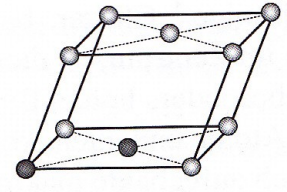
die 14 Bravais-Gitter



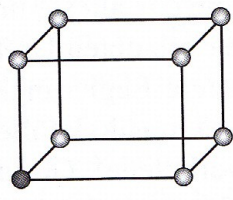
triklin



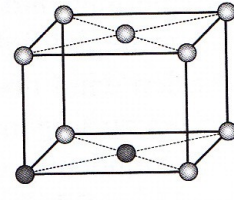
monoklin
primitiv



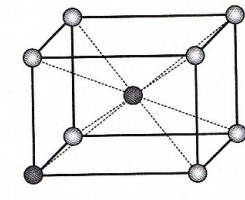
monoklin
basiszentriert



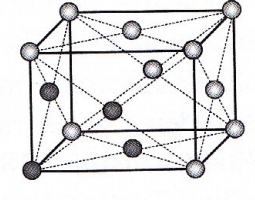
orthorhombisch
primitiv



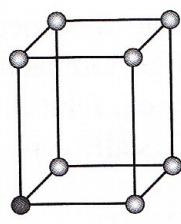
orthorhombisch
basiszentriert



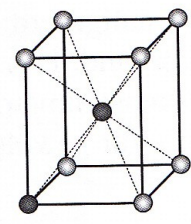
orthorhombisch
raumzentriert



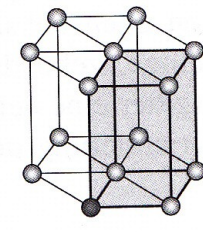
orthorhombisch
flächenzentriert



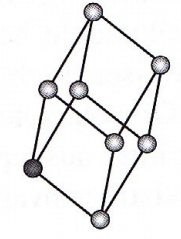
tetragonal
primitiv



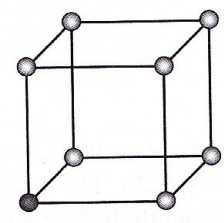
tetragonal
raumzentriert



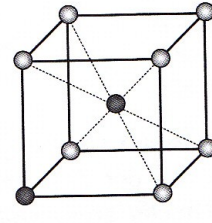
hexagonal



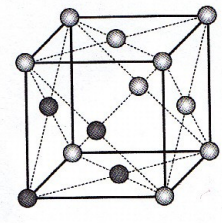
trigonal
(rhomboedrisch)



kubisch
primitiv



kubisch
raumzentriert



kubisch
flächenzentriert

Fig. 1-10

NaCl – jede der Atomsorten bildet ein kubisch flächenzentriertes Gitter (fcc)

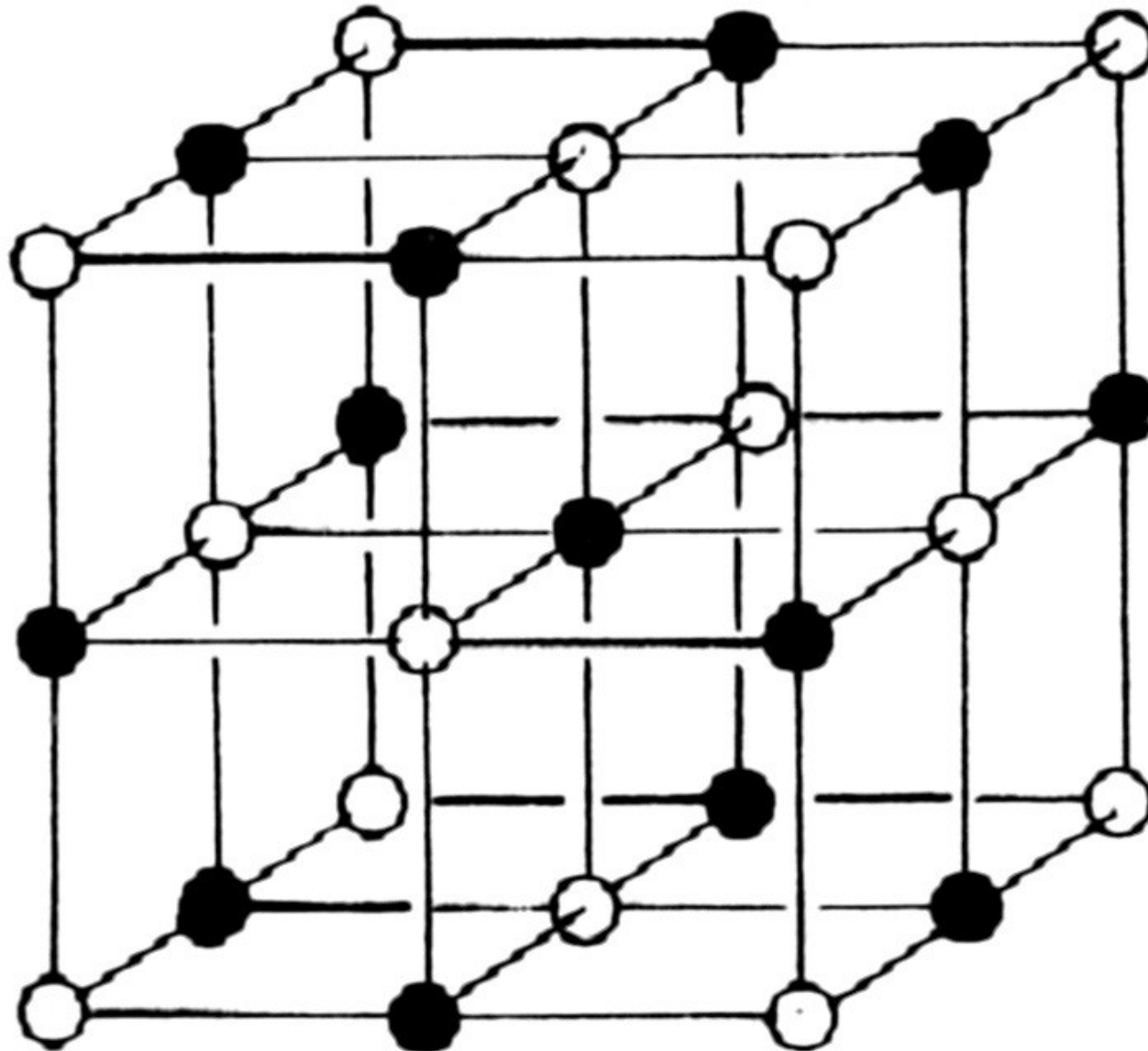


Fig. 1-11

Diamantstruktur

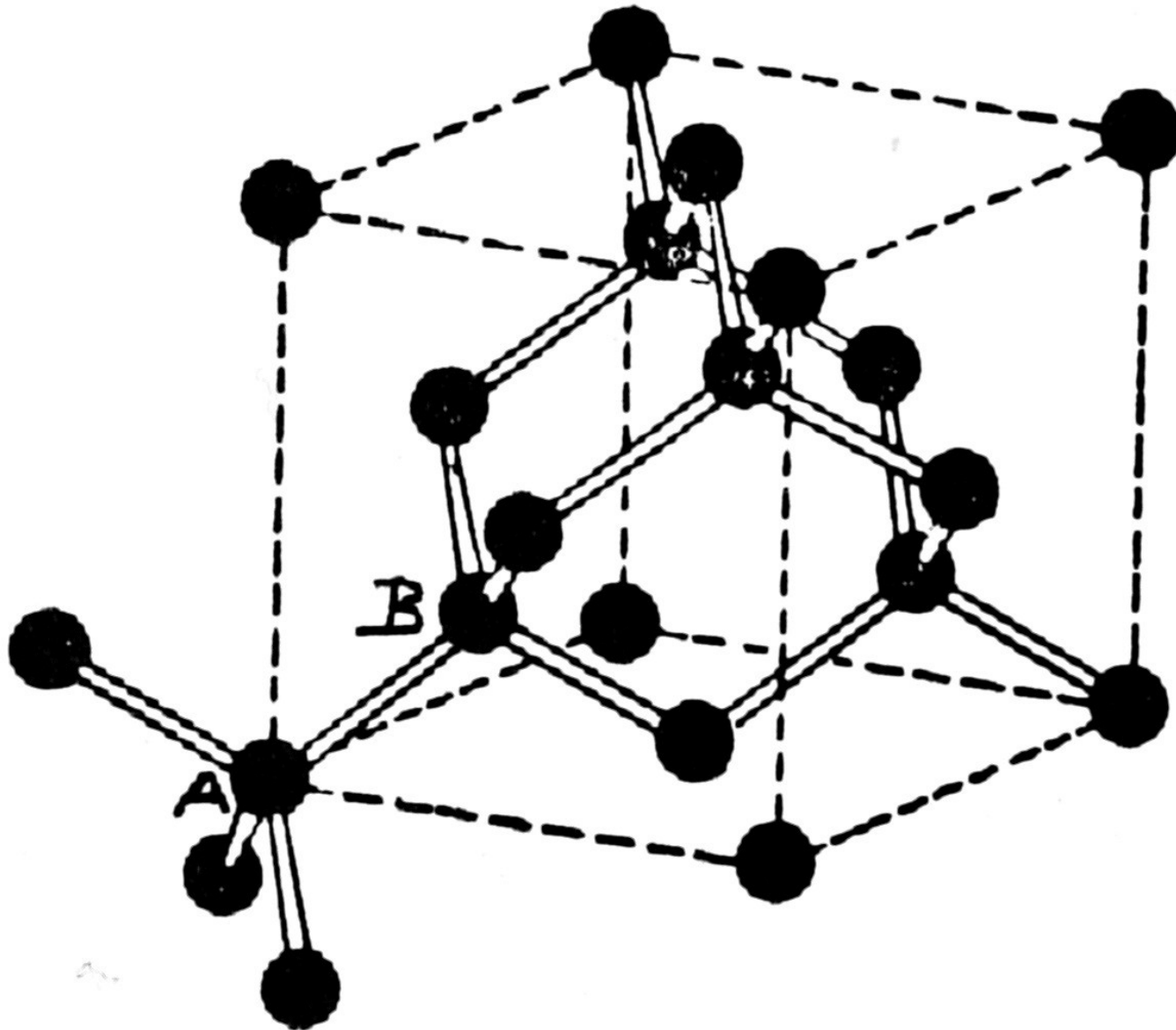


Fig. 1-12a

Diamantstruktur

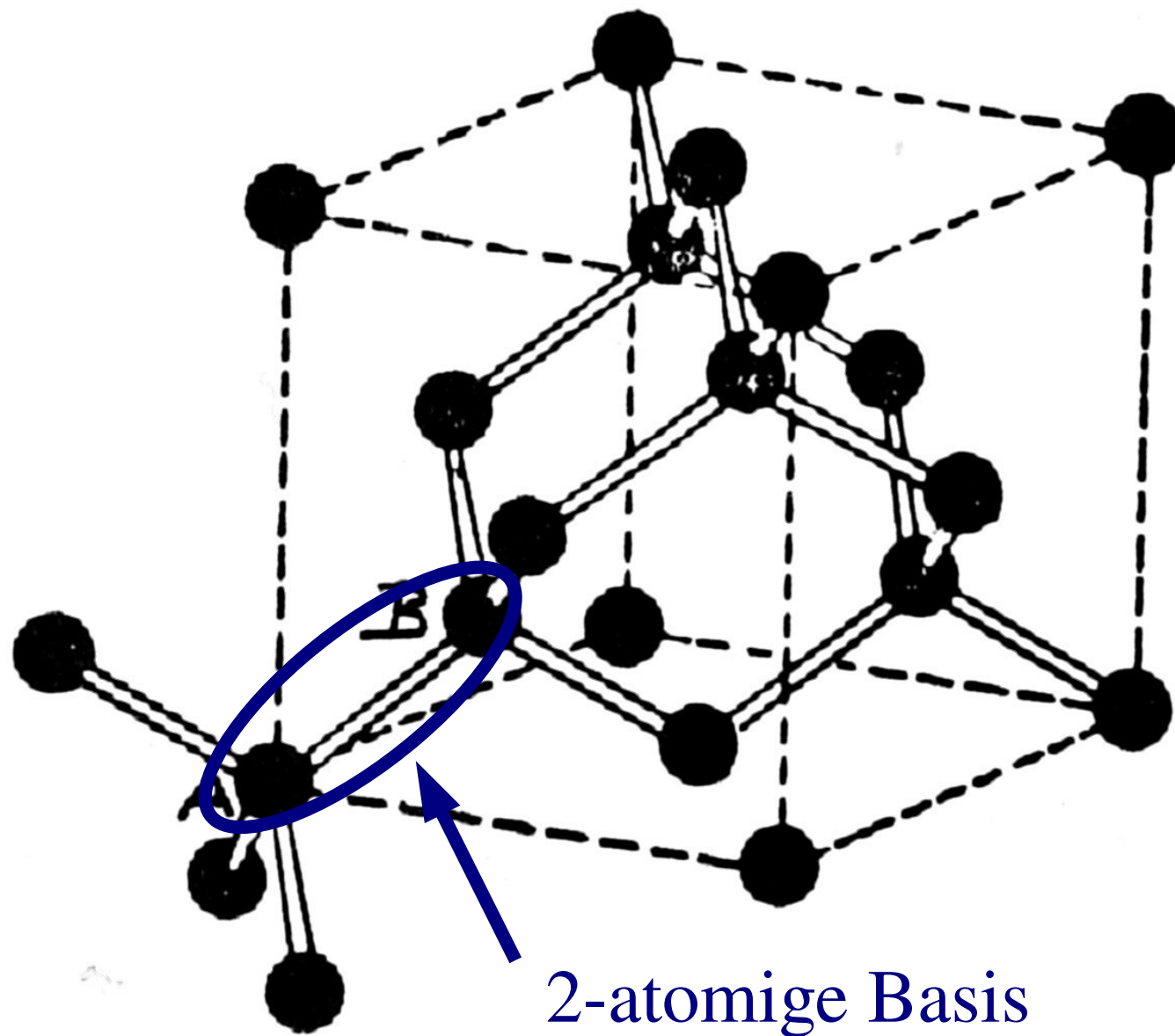


Fig. 1-12b

Diamantstruktur

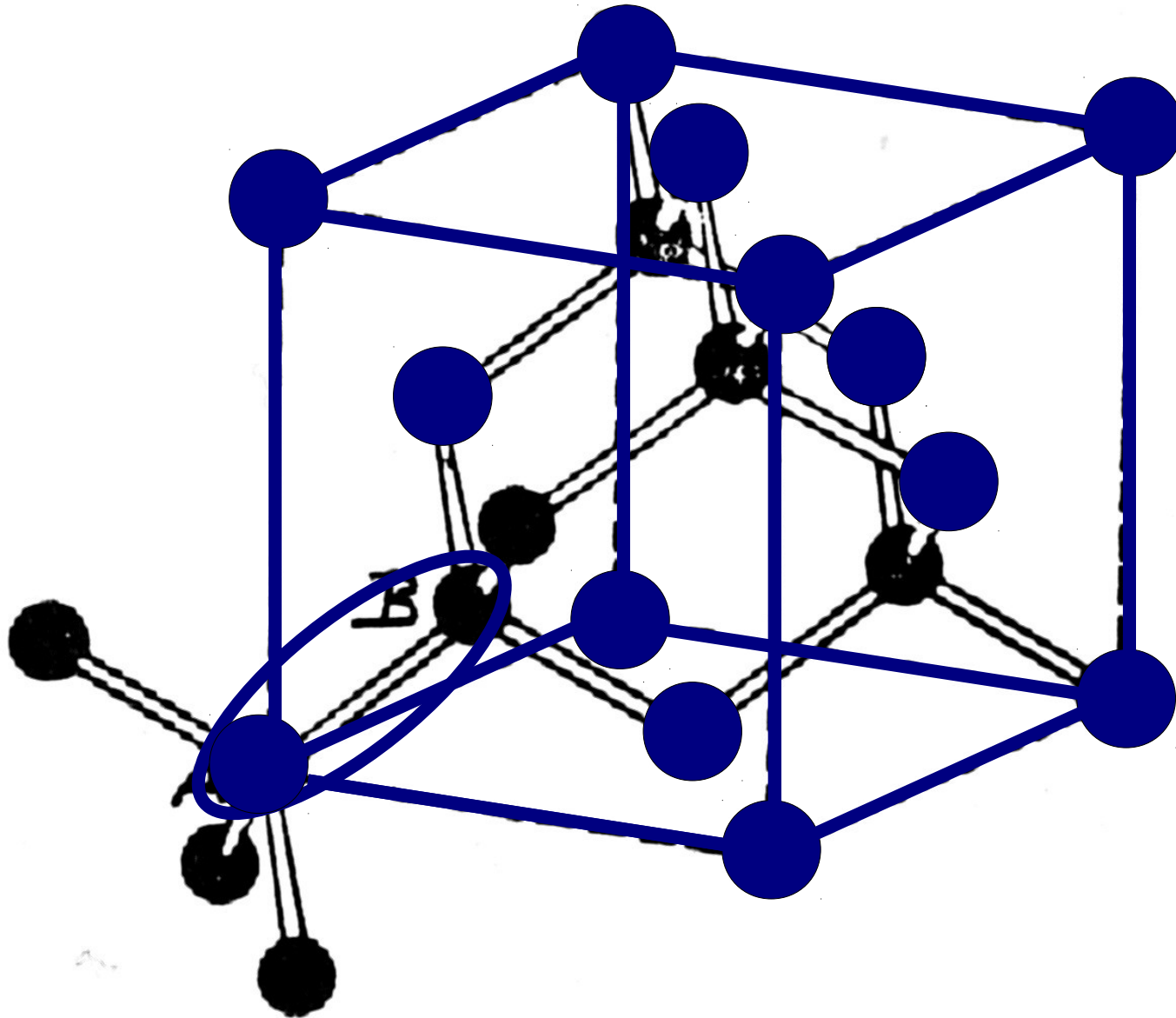
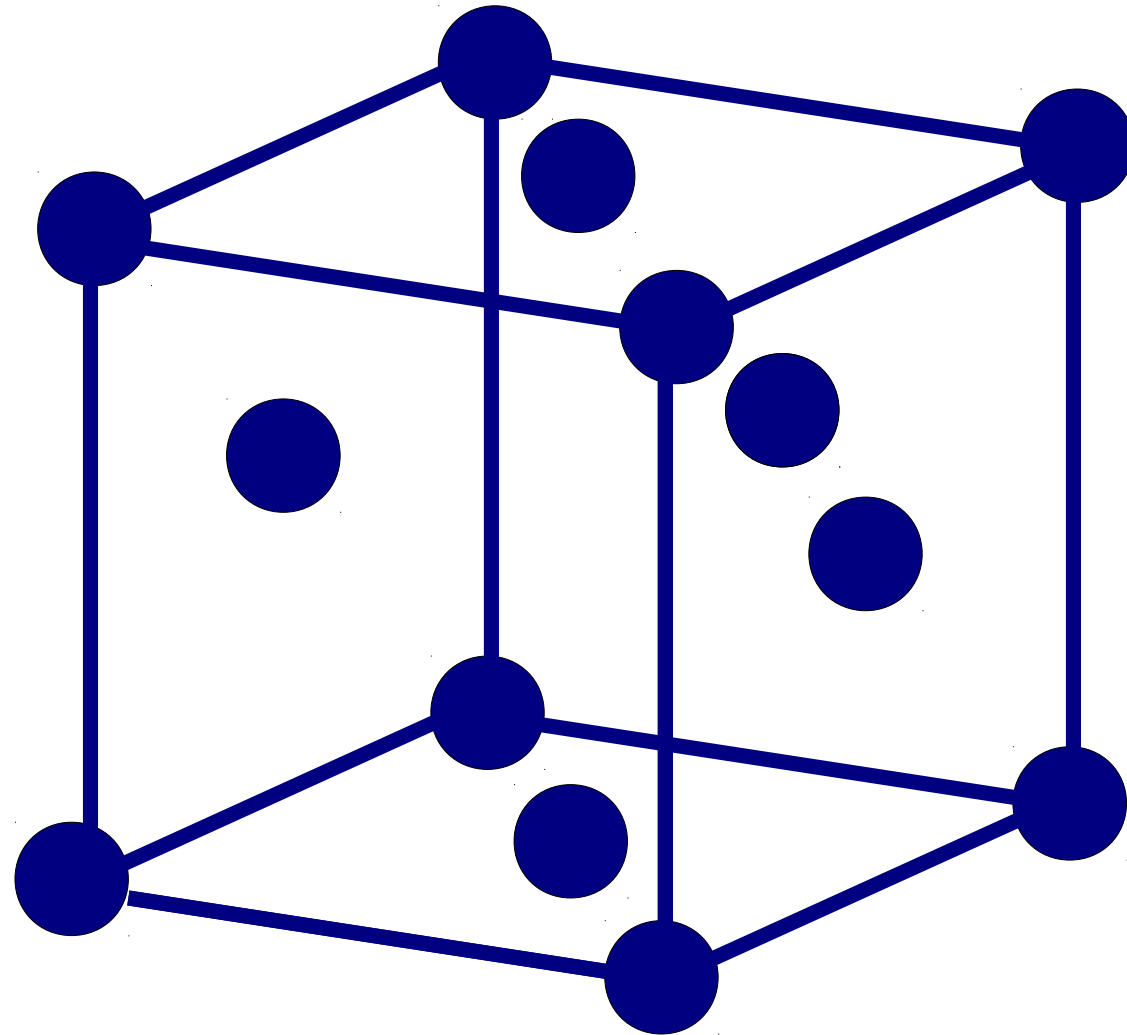


Fig. 1-12c

Diamantstruktur



Punktgitter: kubisch flächenzentriert (fcc)

Fig. 1-12d