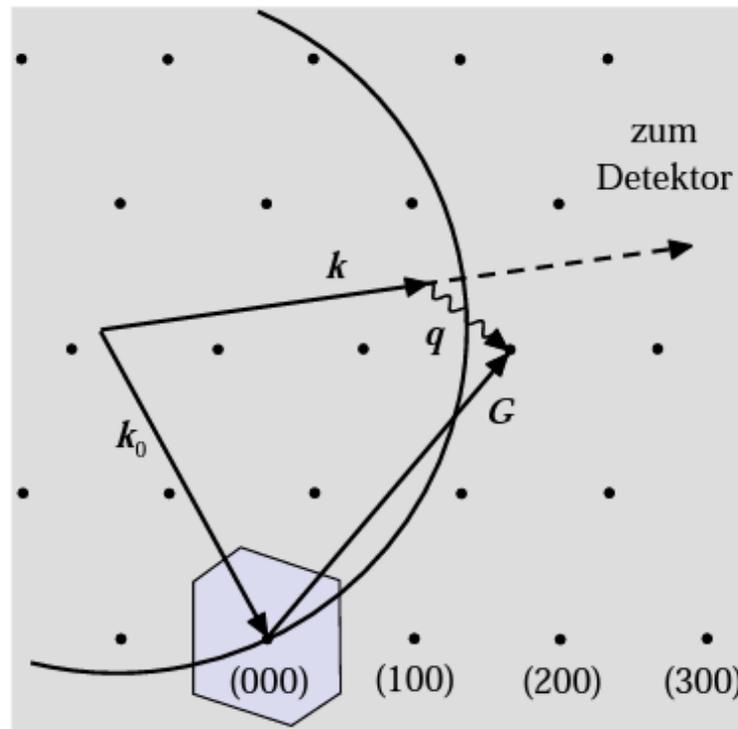
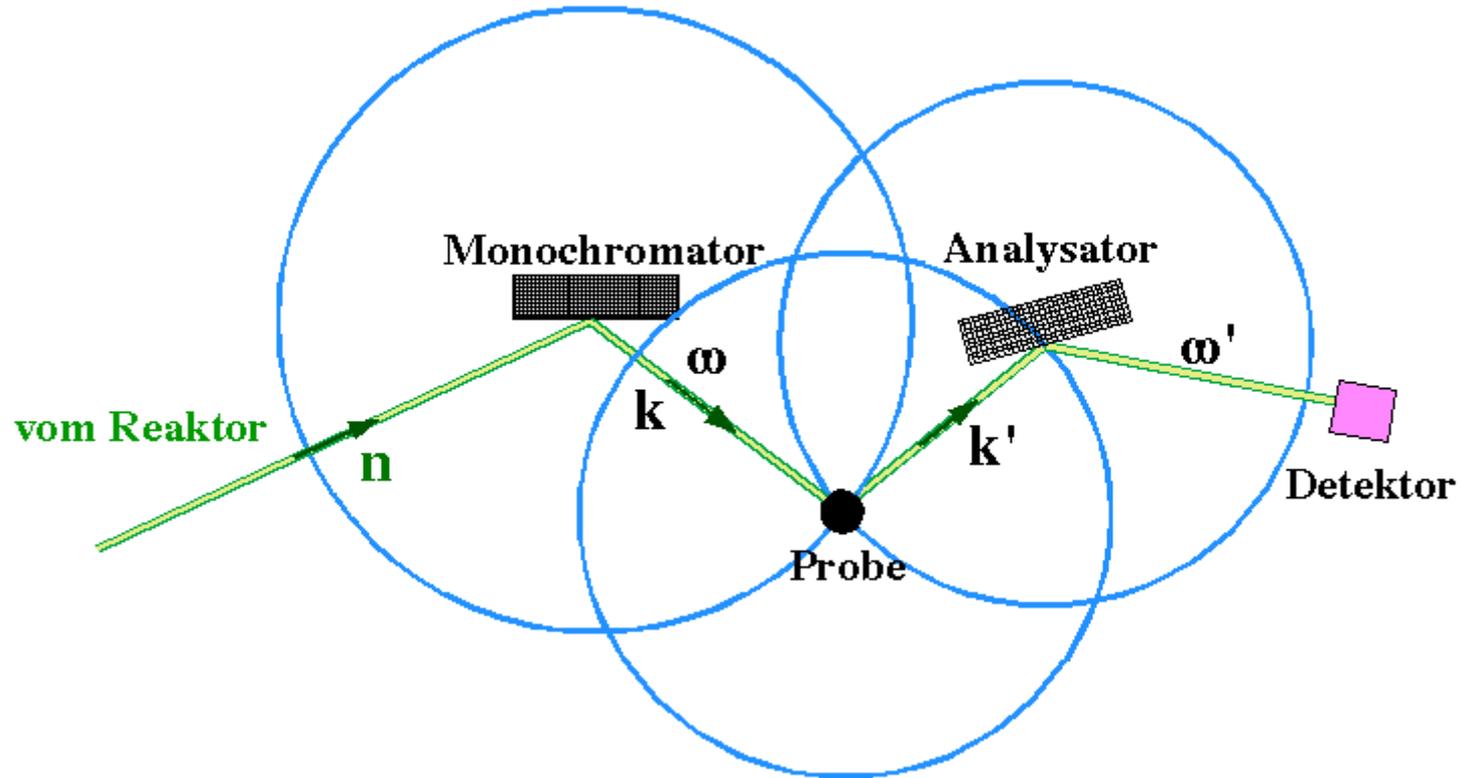


- 1. Gitterschwingungen = Phononen**
- 2. Inelastische Neutronenstreuung**
- 3. Experimentelle Bestimmung von Dispersionskurven**
- 4. Zustandsdichte der Phononen**
- 5. Spezifische Wärmekapazität**
- 6. Anharmonische Effekte**

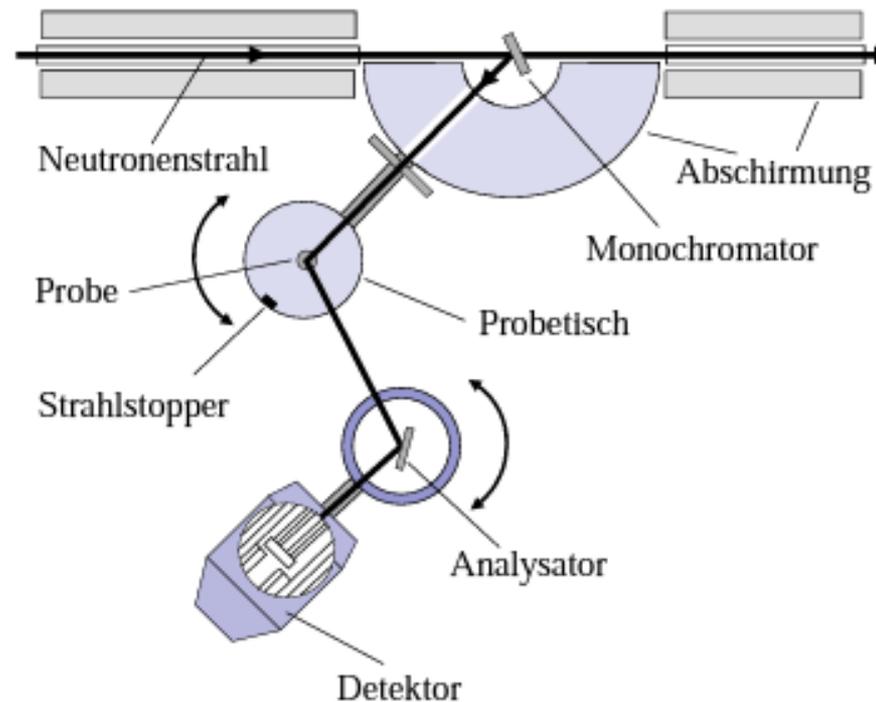


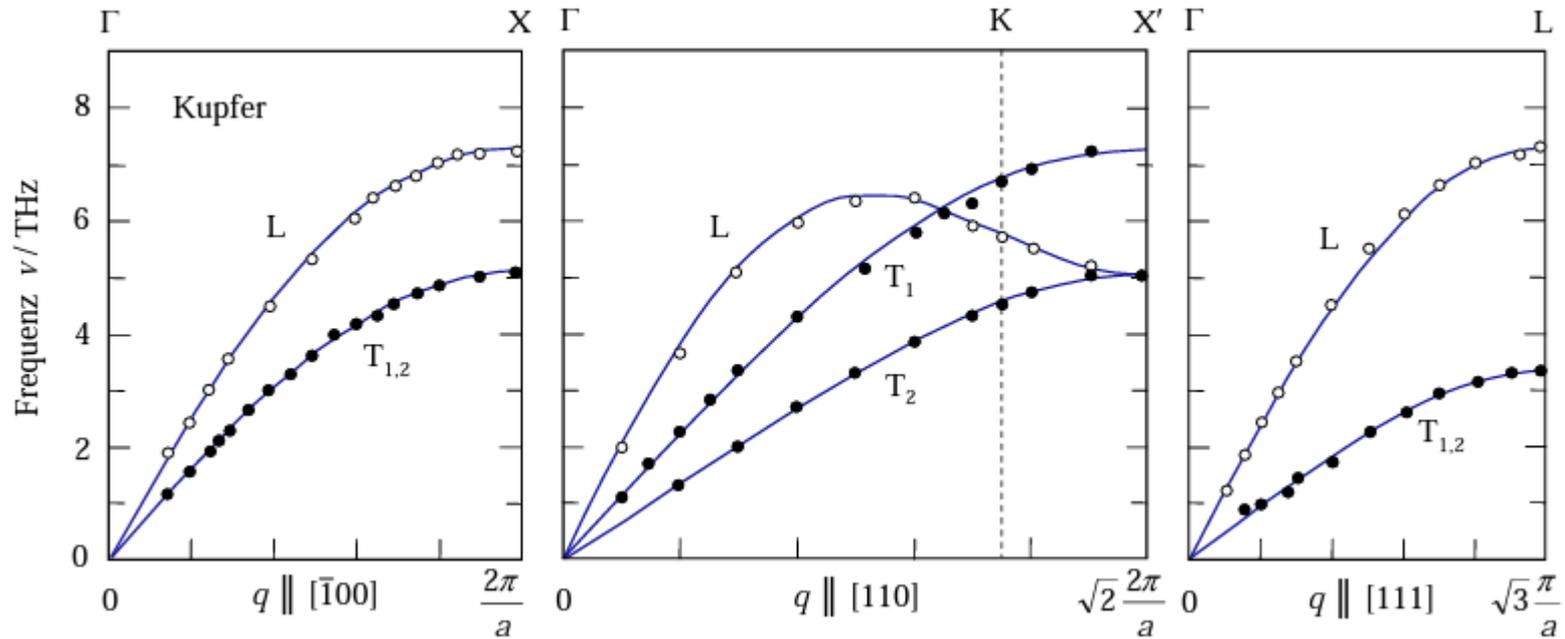


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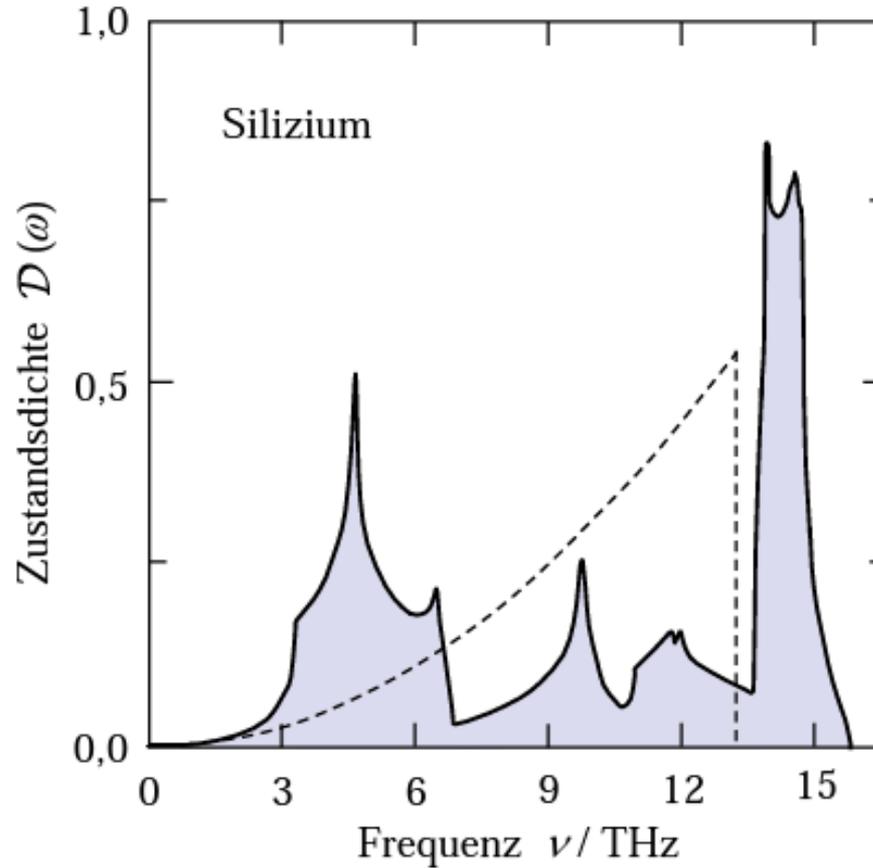
Experimentelle Bestimmung von Dispersionskurven

Neutronenspektrometer

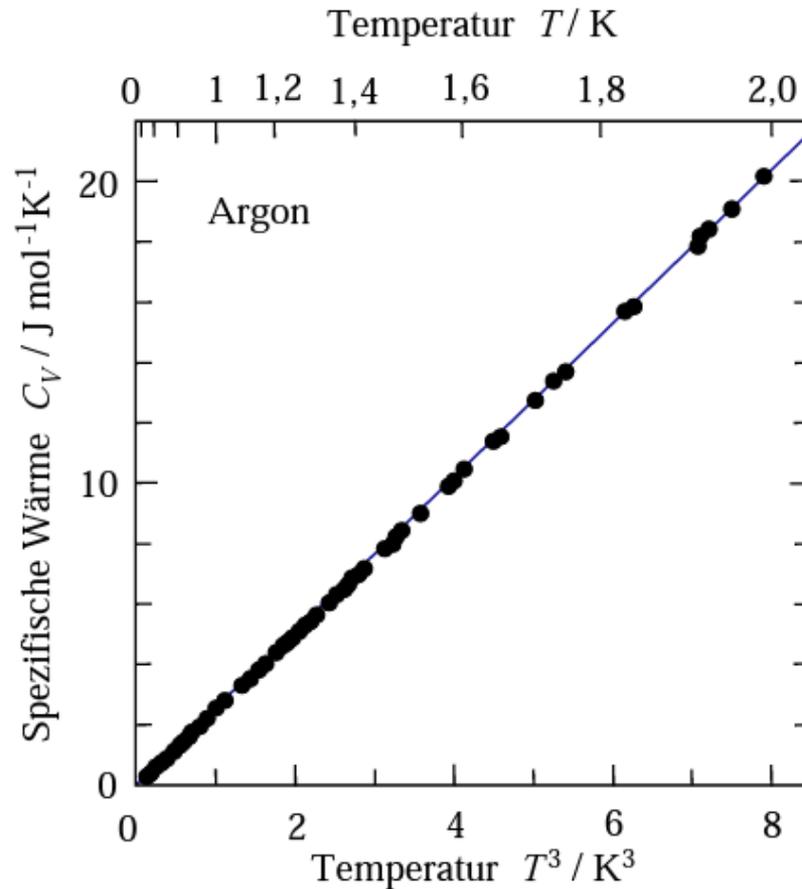




Phononen-Dispersionskurven von Kupfer



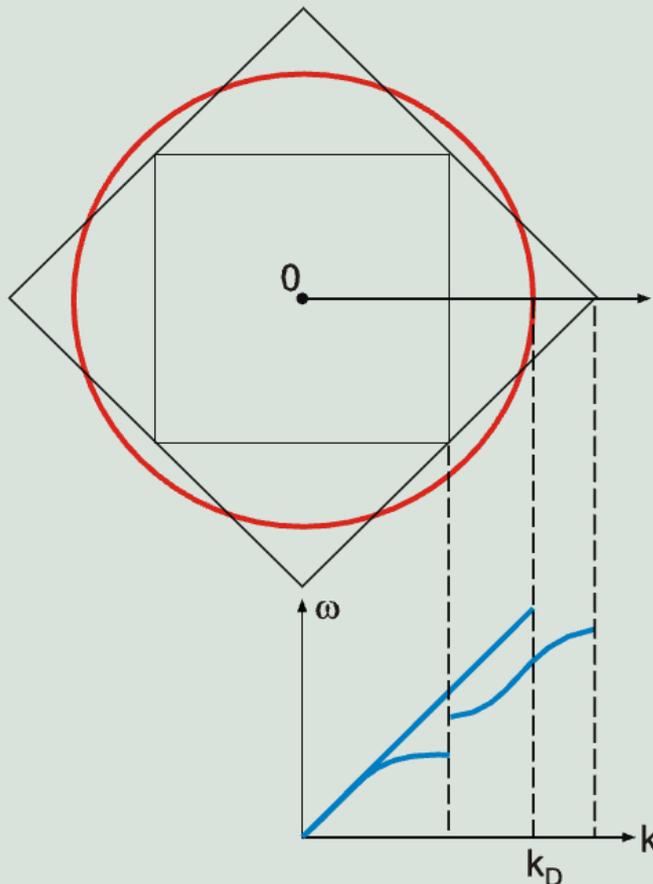
Spezifische Wärme von kristallinem Argon: T^3 Gesetz



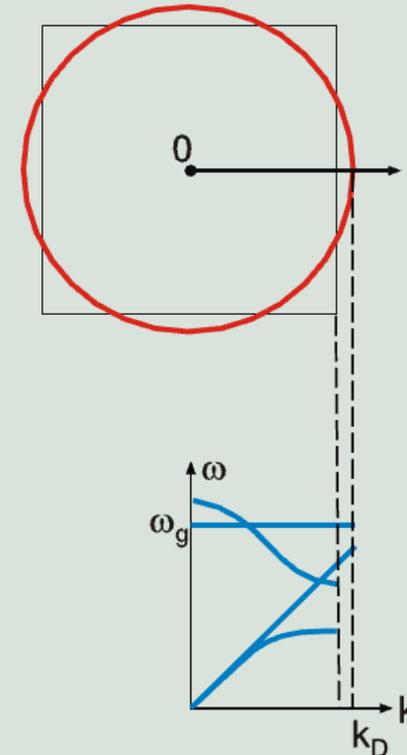
L. Finegold and N. Phillips (1964)

Zwei Näherungen für akustische und optische Moden

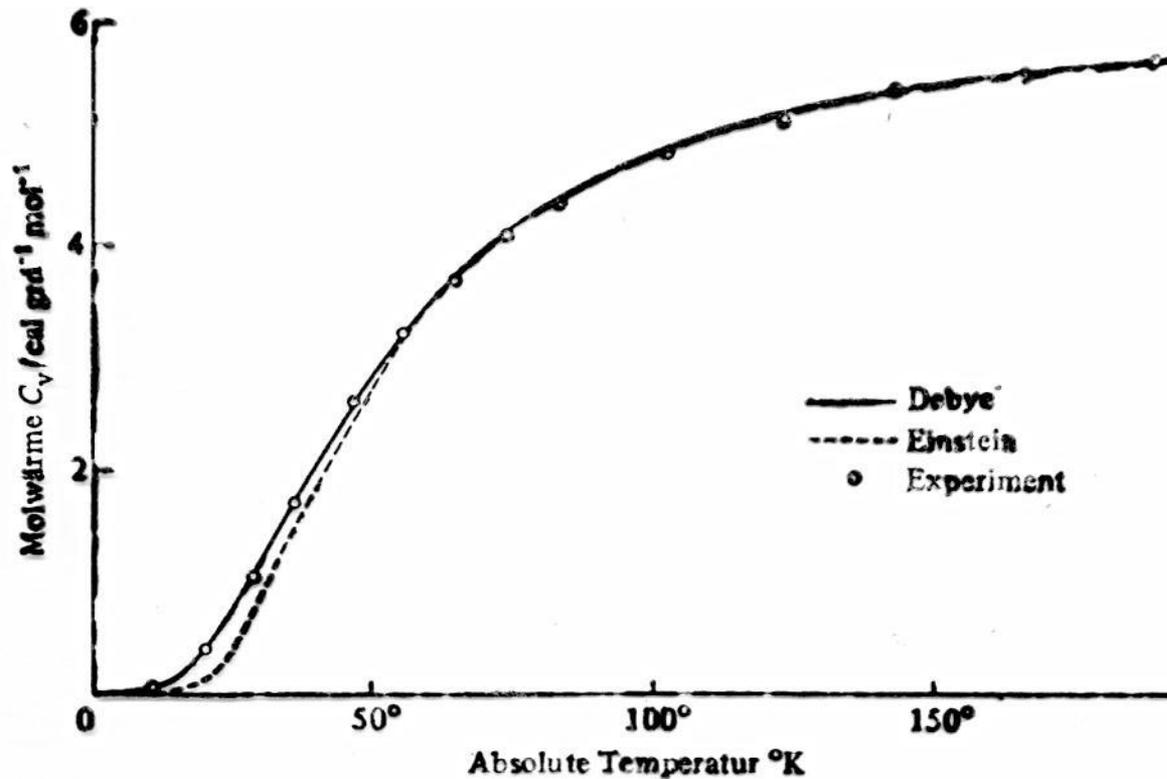
Debye-Modell für alle Moden



Debye-Modell für akustische,
Einstein-Modell für optische
Moden



Spezifische Wärme von Silber

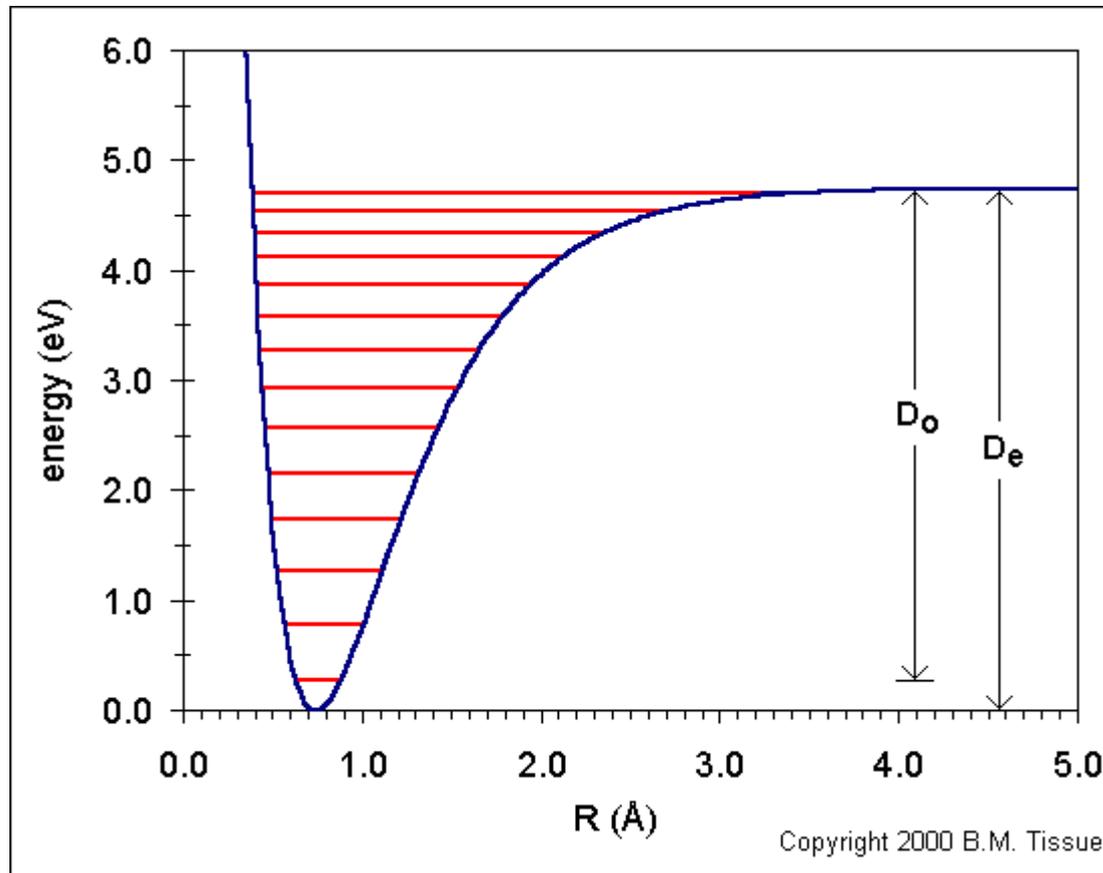


$$\theta_D = 210 \text{ K}$$

$$\theta_E = 160 \text{ K}$$

© D. Livesey (1964)

Morse potential of a diatomic molecule



festes Argon

