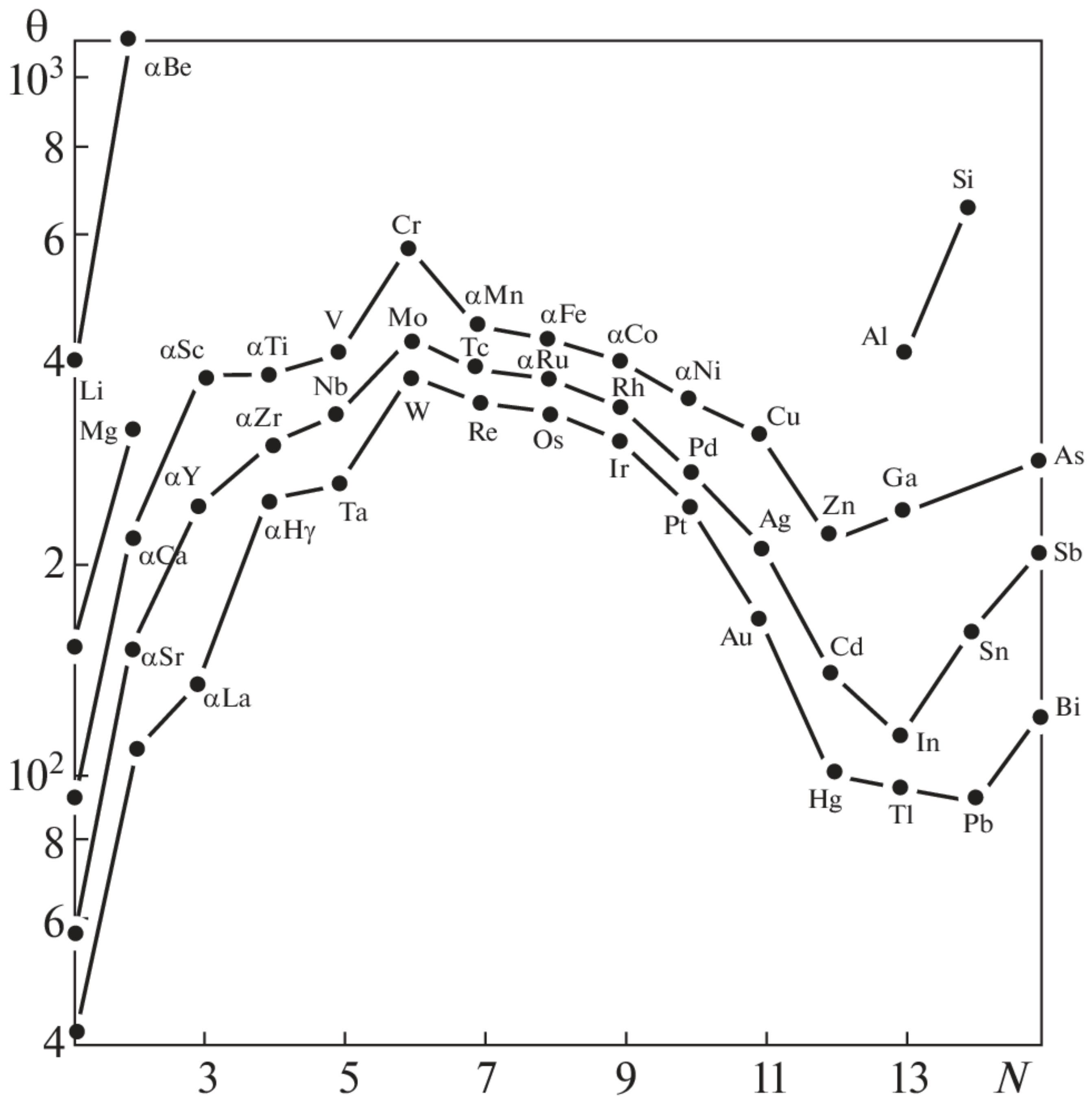
Metal	Electrical conductivity σ (S/m)	Carrier density n (m^{-3})	Hall coefficient R_H (m^3/C)	Lorenz number L ($W\Omega K^{-2}$)	Fermi energy E_F (eV)
Cu (Copper)	$\sim 5.9 \times 10^7$	8.5×10^{28}	$+7.5 \times 10^{-11}$	2.44×10^{-8}	~7.0
Ag (Silver)	$\sim 6.3 \times 10^7$	5.9×10^{28}	$+1.1 \times 10^{-10}$	2.44×10^{-8}	~5.5
Au (Gold)	$\sim 4.1 \times 10^7$	5.9×10^{28}	$+7.3 \times 10^{-11}$	2.44×10^{-8}	~5.5
Al (Aluminum)	$\sim 3.5 \times 10^7$	1.8×10^{29}	-3.5×10^{-11}	2.44×10^{-8}	~11.7
Na (Sodium)	$\sim 2.1 \times 10^7$	2.6×10^{28}	-2.4×10^{-10}	2.44×10^{-8}	~3.2
K (Potassium)	$\sim 1.4 \times 10^7$	1.4×10^{28}	-4.5×10^{-10}	2.44×10^{-8}	~2.1
Mg (Magnesium)	$\sim 2.3 \times 10^7$	8.6×10^{28}	-2.3×10^{-11}	2.44×10^{-8}	~7.1
Ca (Calcium)	$\sim 2.9 \times 10^7$	4.6×10^{28}	-1.3×10^{-10}	2.44×10^{-8}	~4.7
Fe (Iron)	$\sim 1.0 \times 10^7$	$\sim 1.7 \times 10^{29}$*	$+1 \times 10^{-10}$ (complex)	$\sim 2.5 \times 10^{-8}$	~11
Ni (Nickel)	$\sim 1.4 \times 10^7$	$\sim 9 \times 10^{28}$*	-6×10^{-11} (complex)	$\sim 2.5 \times 10^{-8}$	~11
Zn (Zinc)	$\sim 1.7 \times 10^7$	1.3×10^{29}	$+6 \times 10^{-11}$	2.44×10^{-8}	~9.4



Typical Debye temperatures of elements

Home > Technical Physics > Article

Periodicity of the Debye Temperature of Metals

Published: 15 March 2025

Volume 69, pages 2638–2641, (2024) Cite this article

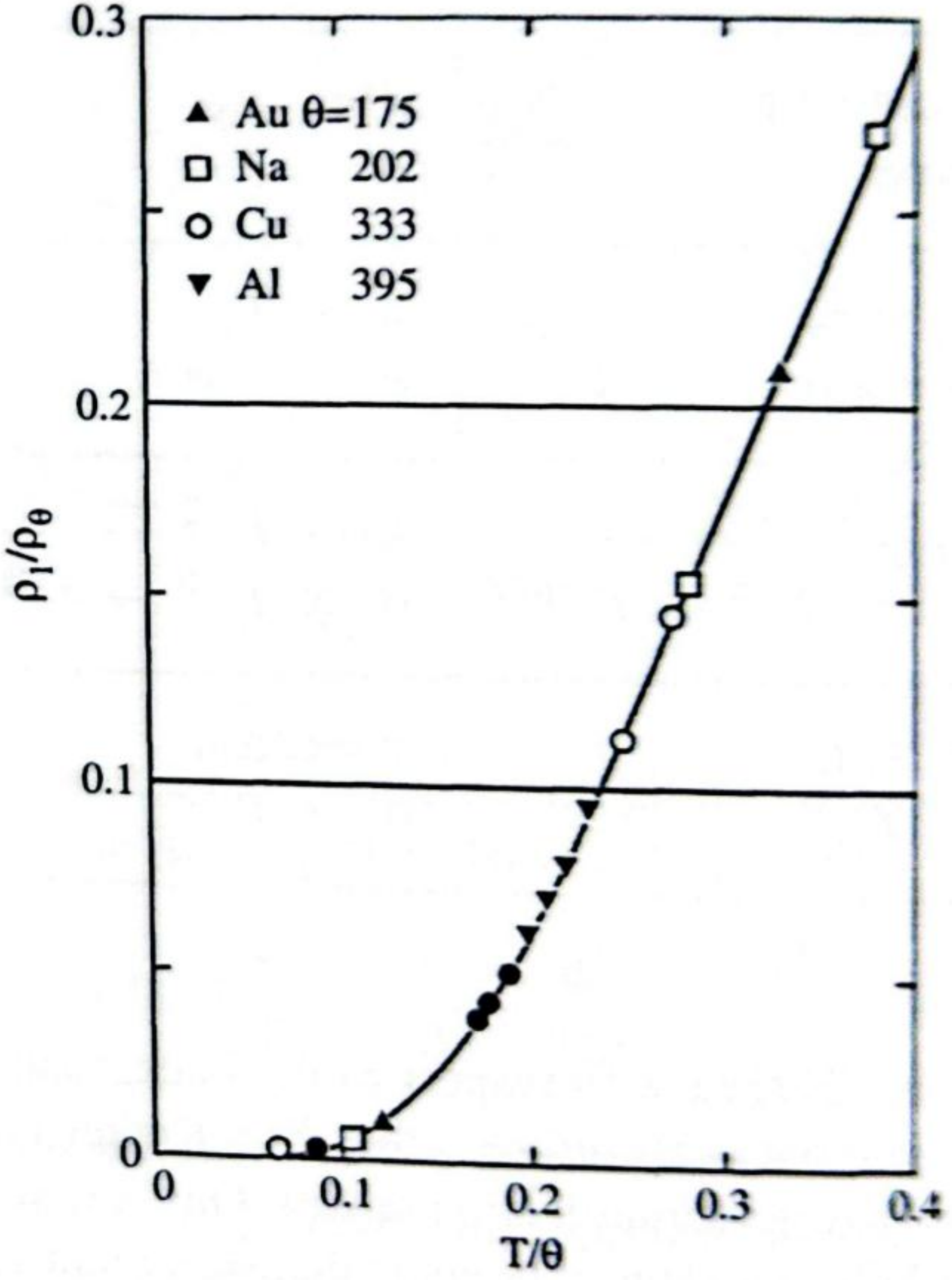


Fig. 9.5 Normalised electrical resistivity data for several metals with reasonably simple Fermi surfaces plotted as a function of the normalised temperature T/θ_R. θ_R is shown in Kelvin for each metal at the top of the figure. Data taken from figures in *Low temperature solid state physics*, by H.M. Rosenberg (OUP, 1963).

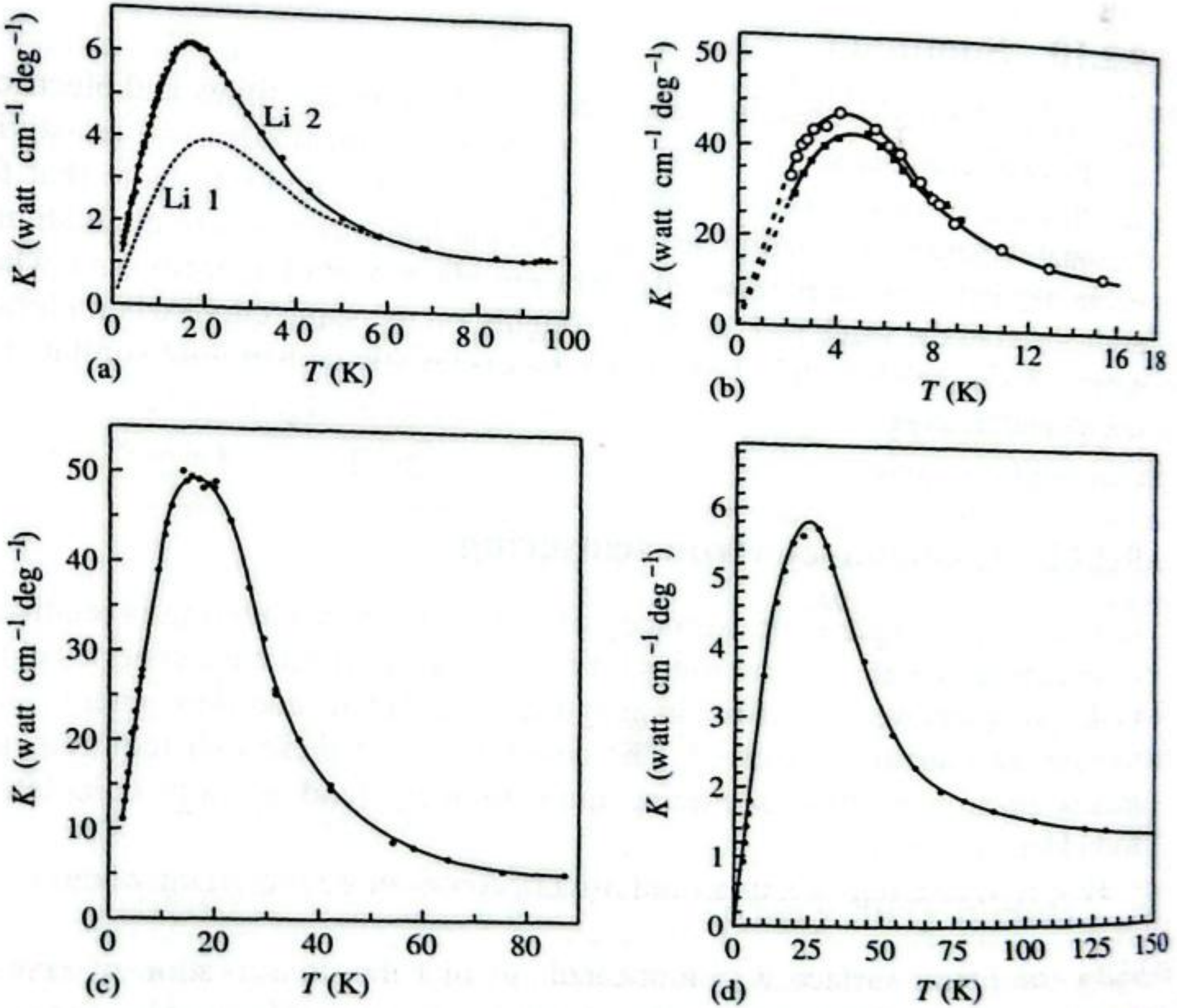


Fig. 9.6 Thermal conductivity data for (a) Li (sample Li 1 is of lower purity than sample Li 2); (b) Na (again showing the effects of dirtier (lower curve) and cleaner (upper curve) samples); (C) Cu; (d) Cr. Data taken from figures in *Low temperature solid state physics*, by H.M. Rosenberg (OUP, 1963).

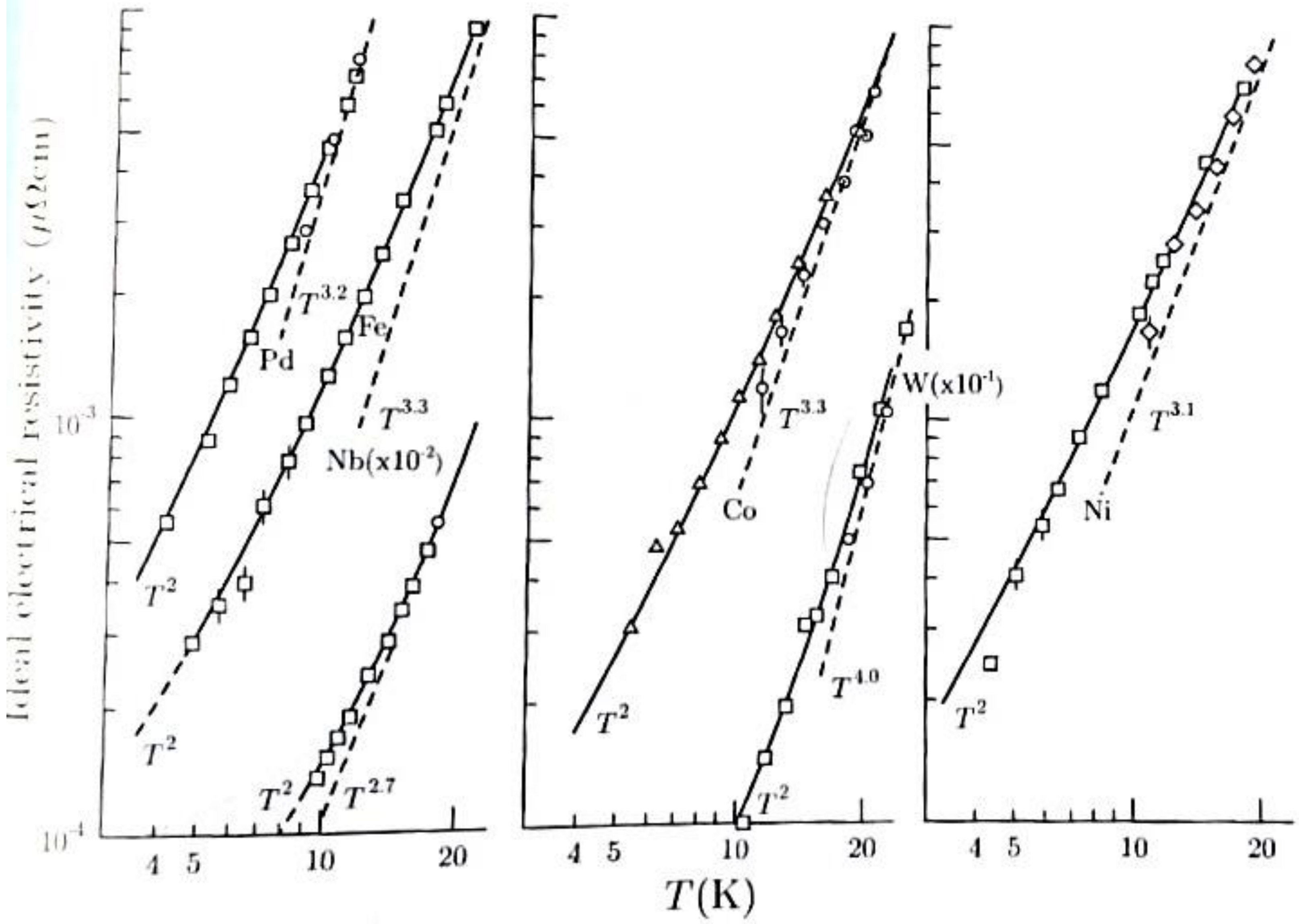


Fig. 9.7 Resistivities of transition metals, showing the approach to T^2 at low temperatures. Data taken from figures in *Low temperature solid state physics*, by H.M. Rosenberg (OUP, 1963).

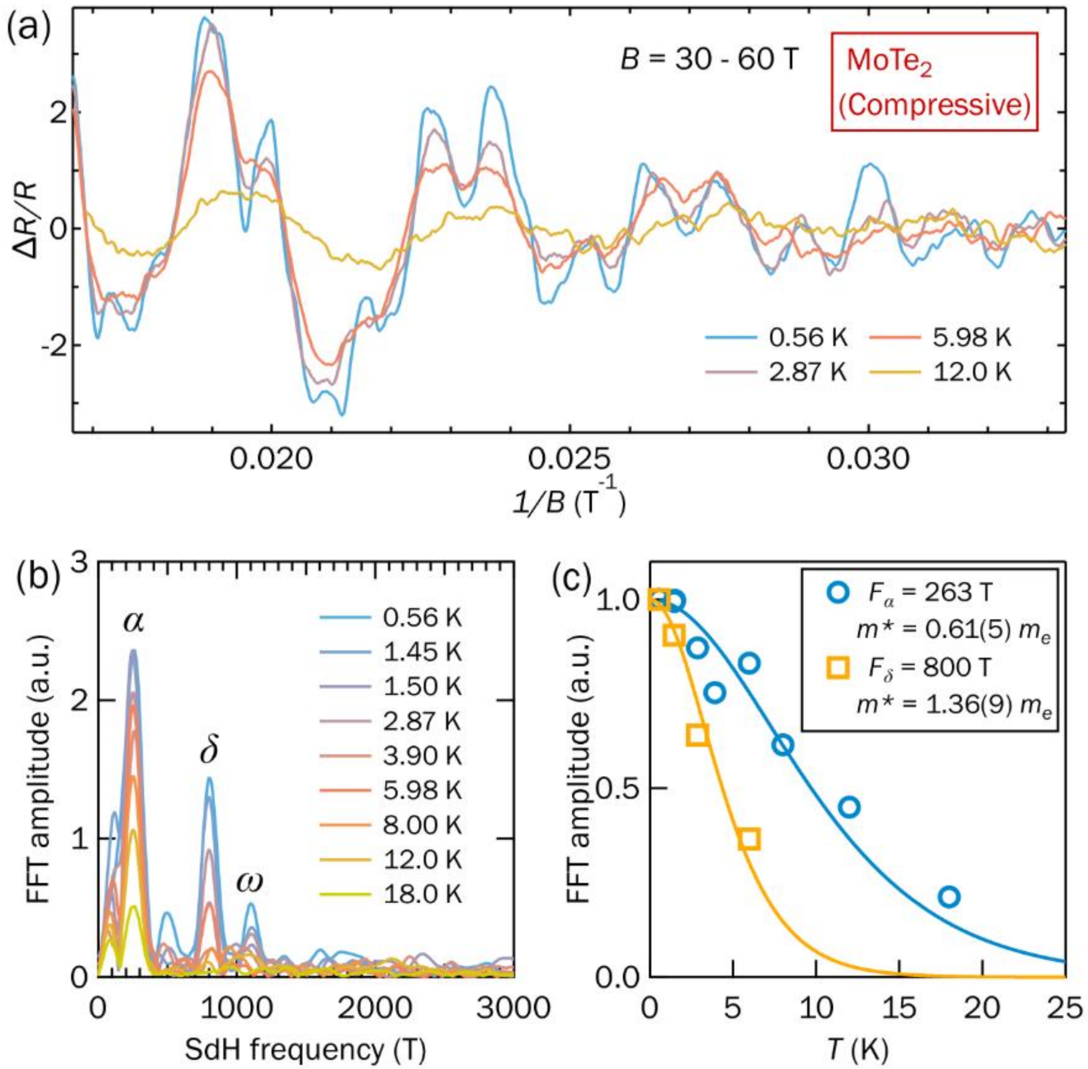
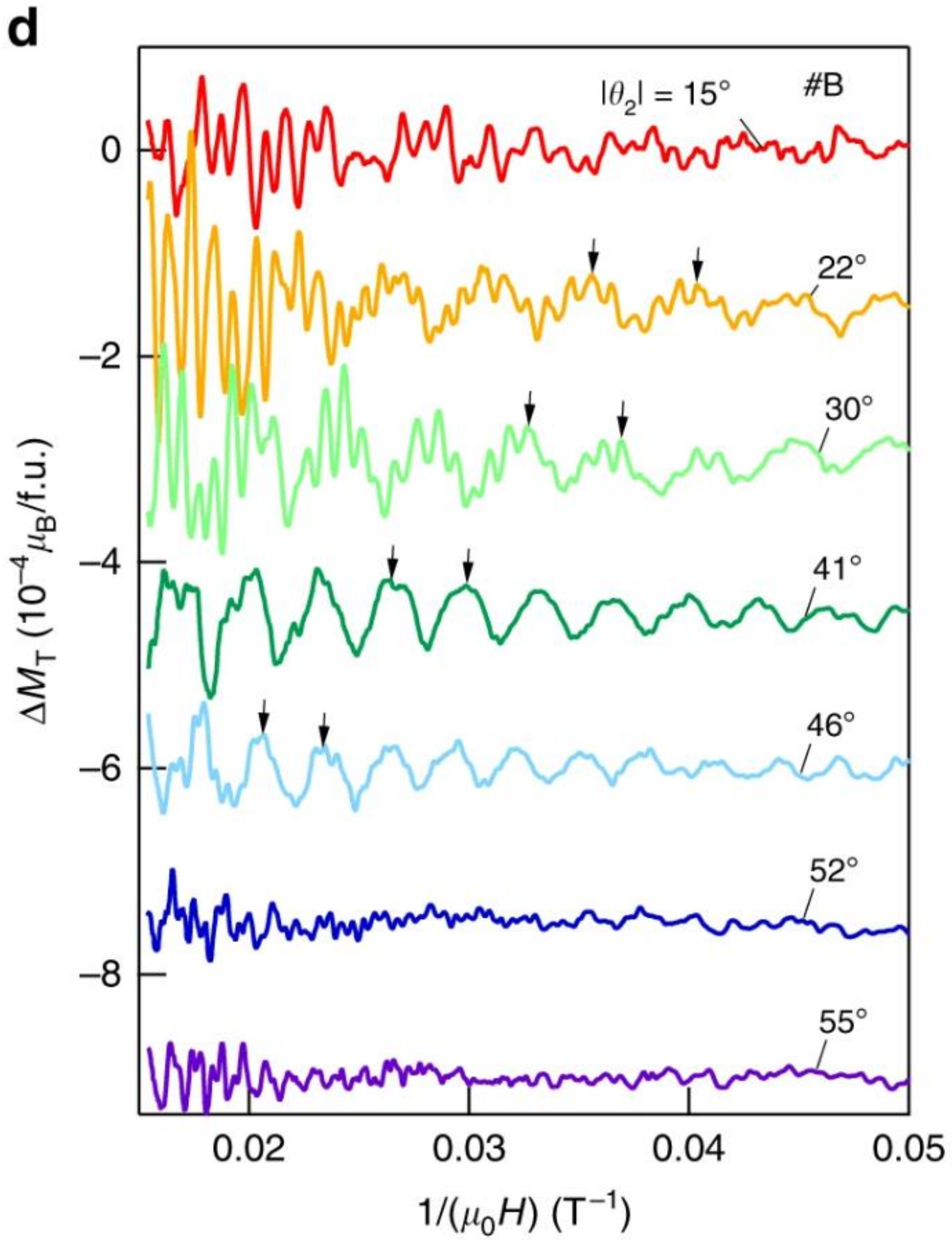


Figure 3: (a) Representative SdH oscillations of strained $MoTe_2$ at different temperatures after removing the magnetoresistance background. (b) FFT spectra at various temperatures ranging from 0.56 K to 18 K, revealing clear peaks at $\alpha \sim 263$ T, $\delta \sim 800$ T, and $\omega \sim 1103$ T. (c) Temperature dependence of the SdH amplitudes for F_α (open circles) and F_δ (open squares). The solid curves are the fittings by Lifshitz-Kosevich (LK) formula (Eqn. 1) and extracted effective masses are shown.



Article | Open access | Published: 25 October 2019

de Haas-van Alphen effect of correlated Dirac states in kagome metal Fe_3Sn_2

Linda Ye, Mun K. Chan, Ross D. McDonald, David Graf, Mingu Kang, Junwei Liu, Takehito Suzuki, Riccardo Comin, Liang Fu & Joseph G. Checkelsky

Nature Communications **10**, Article number: 4870 (2019) | Cite this article