Cryolecture

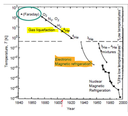
Wednesday, 1. March 2023 22:30

Motivation for cryogenics

- Quite explicit small degeneracy lifted states in the order of μeV
- Thermal energy $k_B T$ much lower than that

$k_B T \ll \Delta E$

Temperature	Thermal Energy (meV)
300 K	26
4 K	0.35
1 K	0.086
100 mK	8.6 μeV


Temperature [K]
Year
Superconductivity
Superfluidity
Liquid Helium
Liquid Nitrogen
Dilution Refrigerator
Pulse Tube
Pulse Tube & Dilution Refrigerator
Nuclear Magnetic Refrigeration
Superconducting Magnets
Adiabatic Demagnetization Refrigerator
Superfluid Helium-3
Superfluid Helium-4
Superconductivity
Superconductivity
Superconductivity