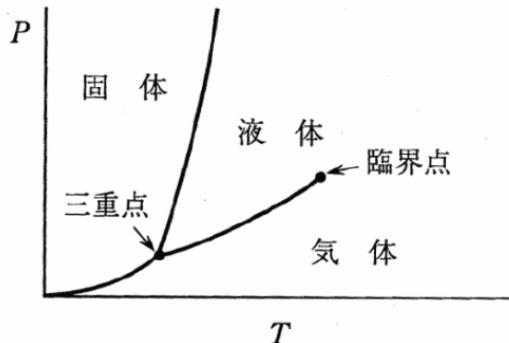
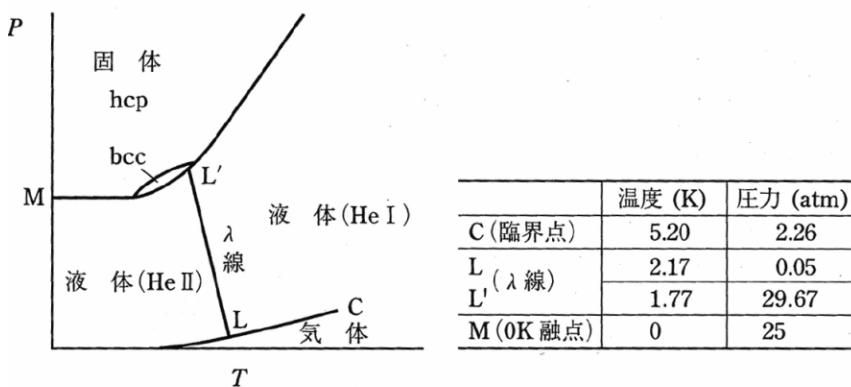


超伝導・超流動入門

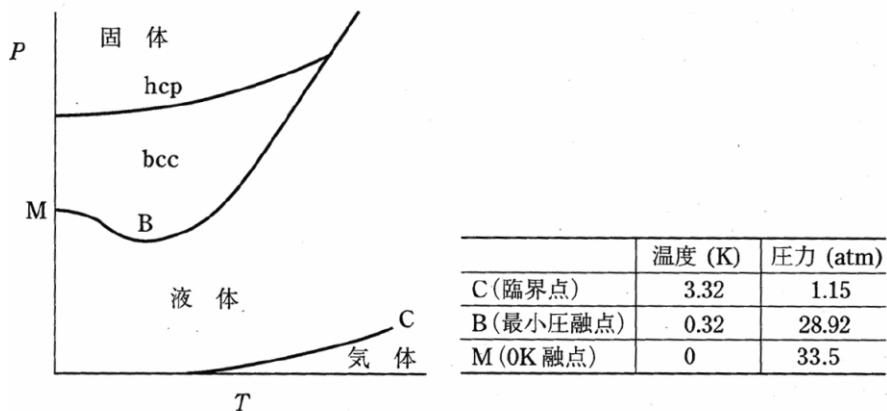
山田一雄・大見哲巨 「超流動」(培風館、1995)



1.3 図 通常物質の相図



1.1 図 ${}^4\text{He}$ の $P-T$ 相図



1.2 図 ${}^3\text{He}$ の $P-T$ 相図

超伝導・超流動入門

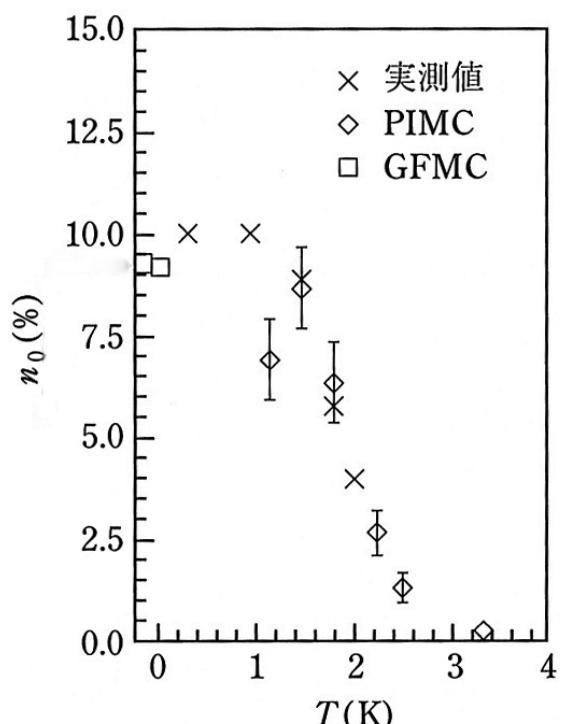
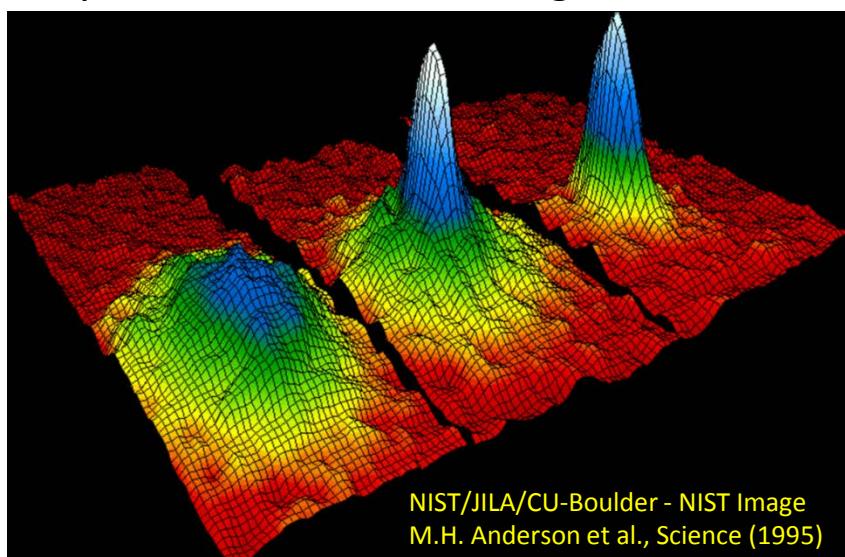
$$T_{BEC} = \frac{2\pi\hbar^2}{mk_B} \left(\frac{N}{2.612V} \right)^{3/2}$$

$$\begin{aligned} N/V &= 2.1 \times 10^{22} \text{ cm}^{-3} \\ m &= 6.6 \times 10^{-24} \text{ g} \\ \rightarrow T_{BEC} &= 3.1 \text{ K} \end{aligned}$$

- Penrose-Onsager Phys. Rev. (1956)
ヘリウムを剛体球だと思って計算
 $\Rightarrow n_0 \sim 10\%$

n_0 の実測と理論
少なくともBECとはコンシスティント

- BEC of dilute Alkali Bose gas
Velocity-distribution data for a gas of rubidium atoms



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The Nobel Prize in Physics 2001
Eric A. Cornell, Wolfgang Ketterle, Carl E. Wieman

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The Nobel Prize in Physics 2001

Eric A. Cornell
Prize share: 1/3

Wolfgang Ketterle
Prize share: 1/3

Carl E. Wieman
Prize share: 1/3

The Nobel Prize in Physics 2001 was awarded jointly to Eric A. Cornell, Wolfgang Ketterle and Carl E. Wieman "for the achievement of Bose-Einstein condensation in dilute gases of alkali atoms, and for early fundamental studies of the properties of the condensates".