

# 教科書 10章の補足

- ・電子比熱＋格子比熱
- ・ボーズ・アインシュタイン凝縮 (川上則雄教授のHPより拝借)

$$C = (\text{電子}) + (\text{格子}) = \gamma T + AT^3$$

Phys.Rev. 133 (1964) A1370

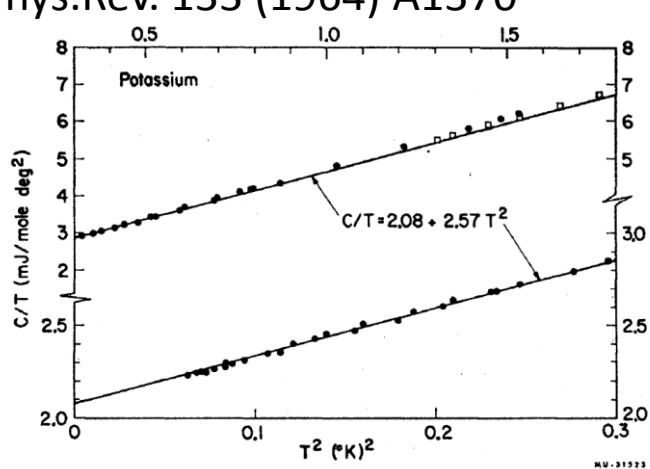


FIG. 1.  $C/T$  versus  $T^2$  for potassium.  $\square$ : liquid-helium cryostat;  $\bullet$ : adiabatic demagnetization cryostat.

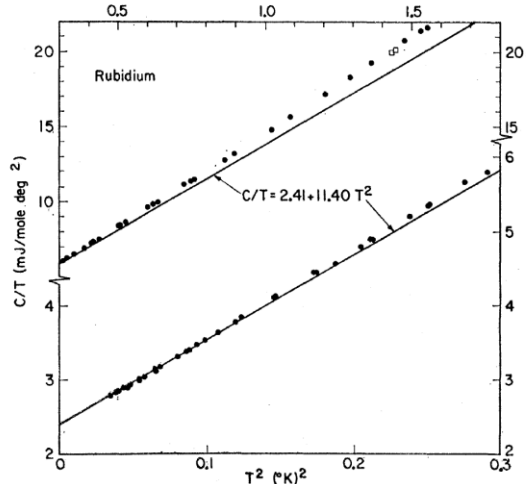


FIG. 2.  $C/T$  versus  $T^2$  for rubidium.  $\square$ : liquid-helium cryostat;  $\bullet$ : adiabatic demagnetization cryostat.

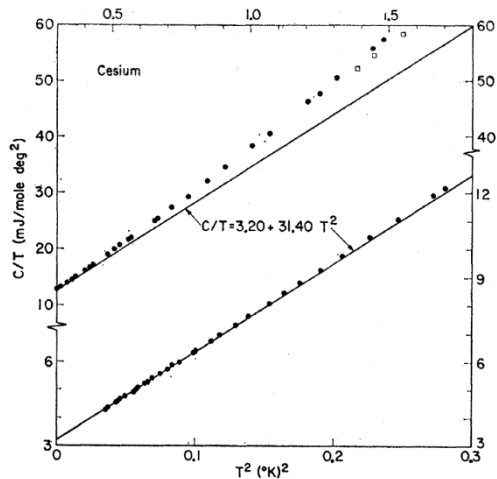


FIG. 3.  $C/T$  versus  $T^2$  for cesium.  $\square$ : liquid-helium cryostat;  $\bullet$ : adiabatic demagnetization cryostat.

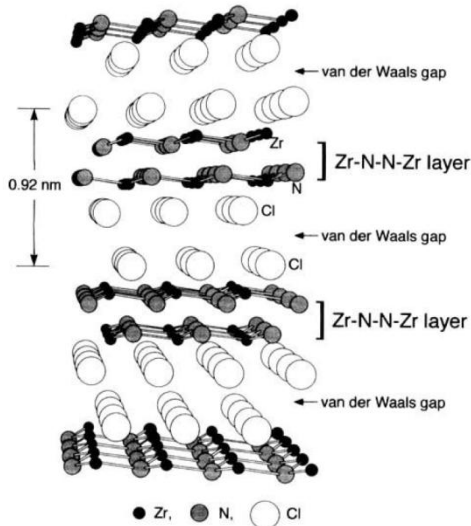
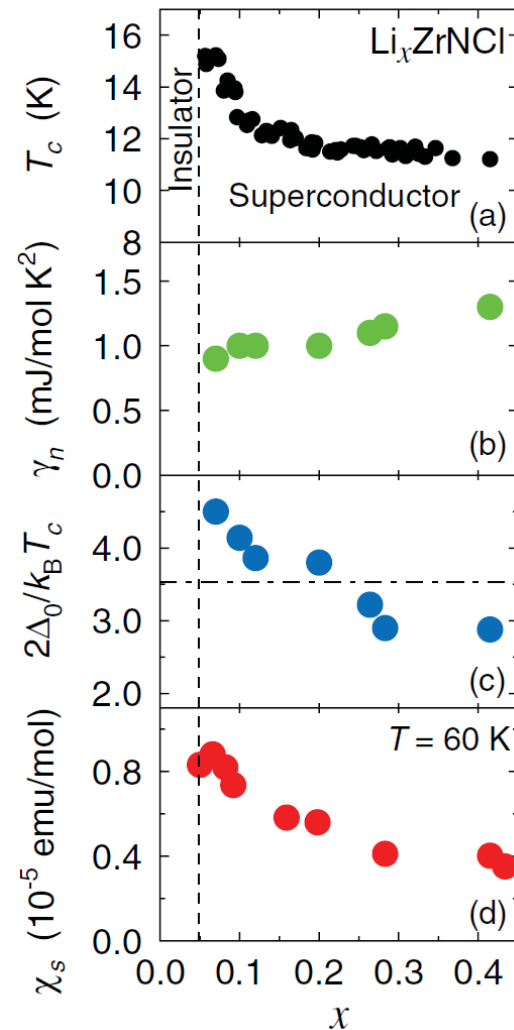
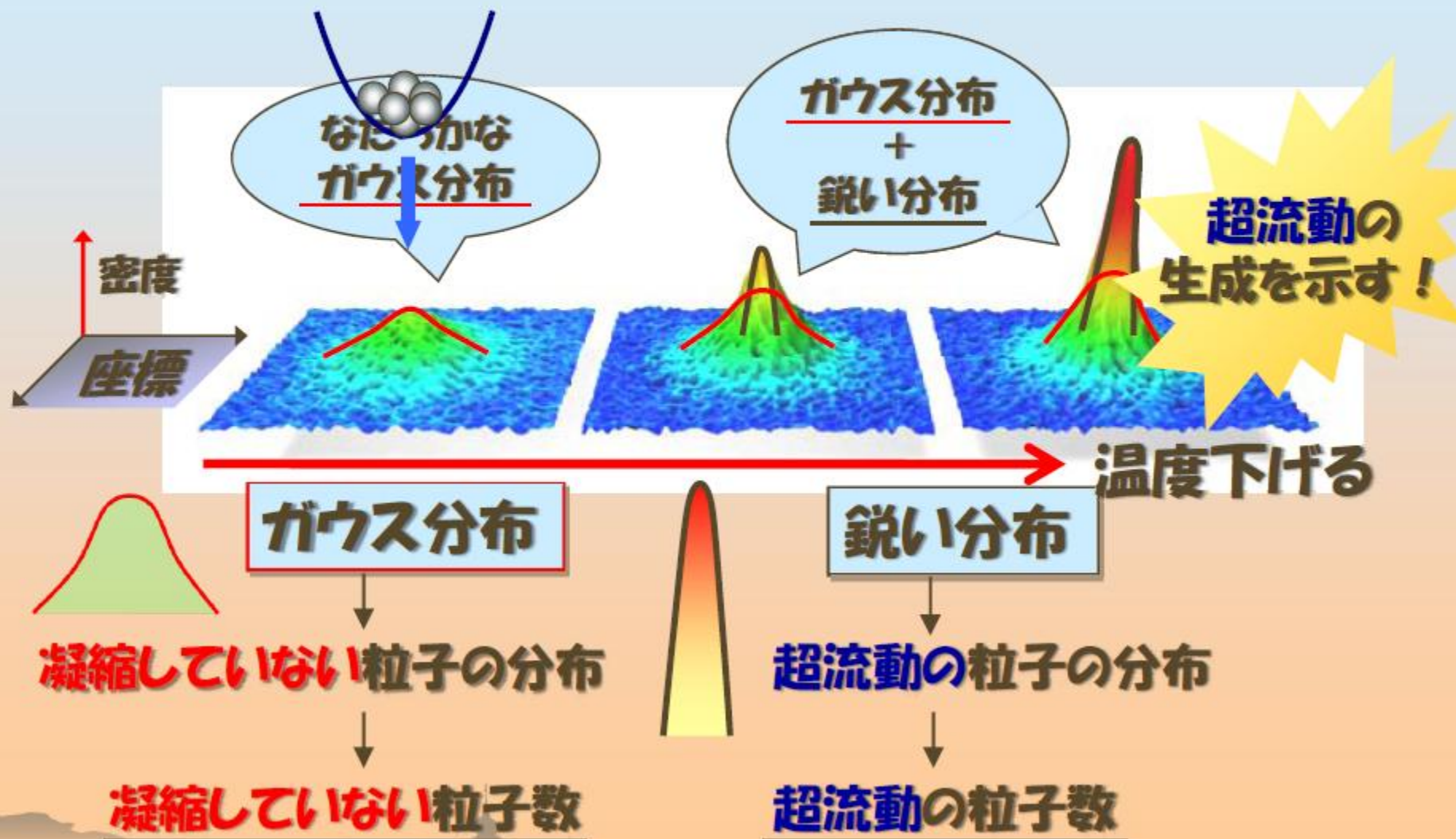


Fig. 1. Structure of  $\beta$ -ZrNCl.

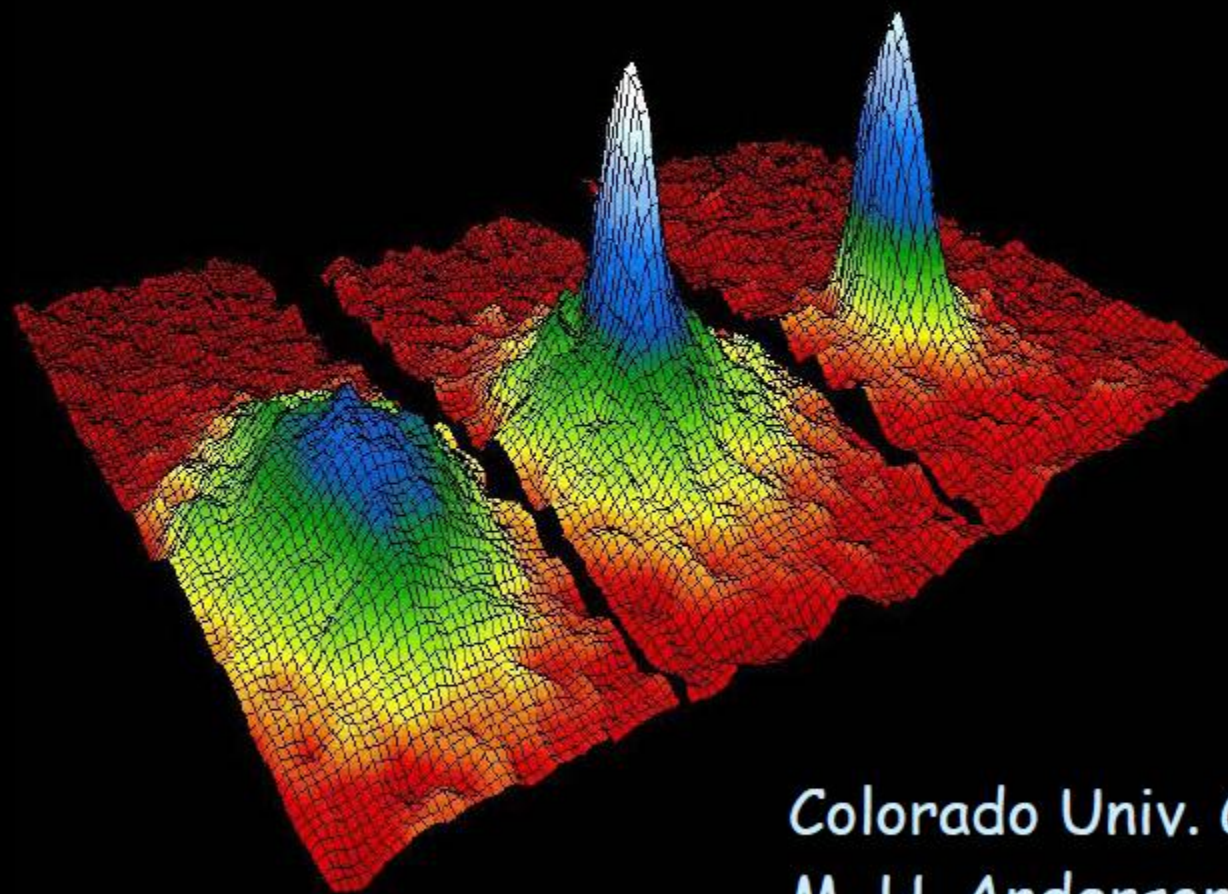
Phys.Rev.Lett.  
103 (2009) 077004



## 超流動の観測



# Rb原子のボース・アインシュタイン凝縮 (TOF像)



Colorado Univ. Group  
M. H. Anderson *et al.*,  
SCIENCE 269, 198 (1995)