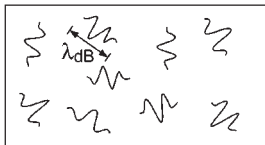


## High Temperature T:

thermal velocity  $v$

density  $d^{-3}$

"Billiard balls"



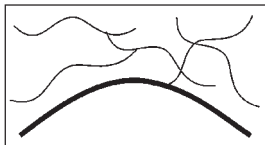
## Low

## Temperature T:

De Broglie wavelength

$$\lambda_{dB} = h/mv \propto T^{-1/2}$$

"Wave packets"

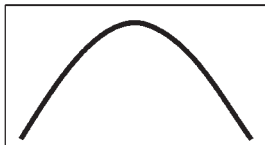


**$T = T_c$ :**

**BEC**

$$\lambda_{dB} \approx d$$

"Matter wave overlap"



**$T = 0$ :**

**Pure Bose  
condensate**

"Giant matter wave"