

## Liouville-ren teoremaren ondorioak (2)

- $\rho(q, p; t)$

$$[\rho, H] = 0 \quad \text{"+"} \quad \frac{d\rho}{dt} = 0 \rightarrow \boxed{\frac{\partial \rho}{\partial t} = 0} \Rightarrow \rho = \rho(q, p)$$

*Exigentzia* *parafuturasuna* *ondorioa*

(1) •  $\rho \neq \rho(q, p) \Rightarrow \rho = \rho_0$   
interpretazioa:

multzoan, multzokideak  
edozein aldiunetan  
uniformeki banatuta daude  
mikroegoera posibleetan

$$\langle f \rangle = \frac{1}{\omega} \int_{\omega} f(q, p) d\omega$$

ΜΙΚΡΟ ΚΑΝΟΝΙΚΟΤΑ

(2)

$$\rho(q, p) = \rho[H(q, p)]$$

aukera naturalena

$$\rho(q, p) \propto \exp[-H(q, p)/kT]$$

ΚΑΝΟΝΙΚΟΤΑ