

2.4 atala (a)

$$\omega = \int' \dots \int' d^{3N} q d^{3N} p$$

$$\left[ \int' \dots \int' d^{3N} q \right] \cdot \left[ \int' \dots \int' d^{3N} p \right]$$

$$\underbrace{\left[ \int \dots \int \right]_N}_{VN}$$

$$\int \dots \int d^{3N} p$$

$$(E - \frac{1}{2}\Delta) \leq \sum_{i=1}^{3N} \left( \frac{p_i^2}{2m} \right) \leq (E + \frac{1}{2}\Delta)$$

hipergeometria

$$\Delta \left( \frac{m}{2E} \right) \left\{ \frac{2\pi^{\frac{3N}{2}}}{\left[ \left( \frac{3N}{2} \right) - 1 \right]!} (2mE)^{\frac{(3N-1)}{2}} \right\}$$

$$\omega \approx \frac{\Delta}{E} V^N \frac{(2\pi mE)^{\frac{3N}{2}}}{\left[ \left( \frac{3N}{2} \right) - 1 \right]!}$$

Mutzoaren ordezko  
fase-espazioan

$$H = \sum_{i=1}^N \frac{p_i^2}{2m}$$

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amarkorren alderatuta

$$\Gamma = \frac{-\omega}{\omega_0} \rightarrow 2\text{gan}$$

$$\omega_0 \equiv h^{3N}$$

$$\omega \equiv h \rightarrow \text{arbitrario-garbi Kopieru}$$