

$\nu - \nu - \dots \nu - \nu$

$$U(\nu) d\nu = \frac{Z(\nu) d\nu}{V} \cdot k_B T$$
$$= \frac{8\pi}{c^3} \nu^2 \cdot \boxed{k_B T}$$

$7^{\circ} \rightarrow 7$

$$\langle E \rangle = k_B T \rightarrow \langle E \rangle = \frac{h\nu}{e^{h\nu/k_B T} - 1}$$

\downarrow

$$U(\nu) d\nu = \frac{8\pi}{c^3} \nu^2 \cdot \frac{h\nu}{e^{h\nu/k_B T} - 1}$$

$$= \frac{8\pi}{c^3} \nu^3 \cdot \underbrace{\frac{h}{e^{h\nu/k_B T} - 1}}$$

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$$F(x) = \frac{k_B \beta}{e^{x\beta} - 1}$$

$$x = \frac{\nu}{T}$$

$$h = k_B \beta$$