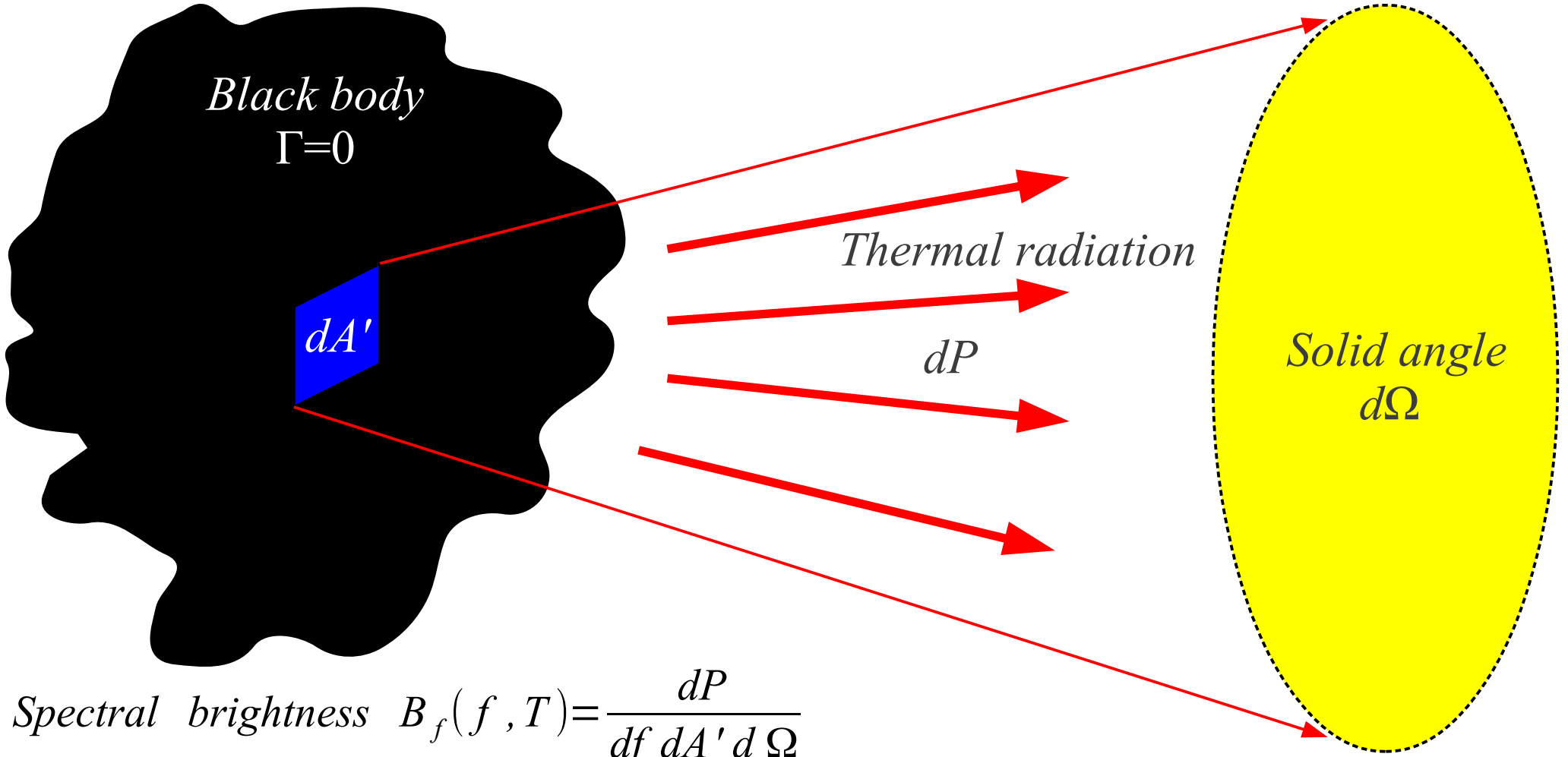

Spectral brightness $B_f(f,T)=\frac{dP}{df\, dA'\, d\Omega}$

Planck law $B_f(f,T)=\frac{2hf^3}{c_0^2}\cdot\frac{1}{e^{\frac{hf}{k_BT}}-1}$

Free space ϵ_0, μ_0

$c_0=299792458\,\mathrm{m/s}\approx 3\cdot 10^8\,\mathrm{m/s}$

Radio $hf \ll k_BT$ → Rayleigh–Jeans approximation $B_f(f,T)\approx\frac{2k_BTf^2}{c_0^2}=\frac{2k_BT}{\lambda^2}$