Neutrino Transport (Boltzmann Equation)

$$1/c\ \partial I/\partial t = j + \int_0^\infty \int_{4\pi} K_s(E' \to E,\ \Omega' \to \Omega)\ I(E', \Omega')\ d\Omega'\ dE' - \Omega \cdot \nabla I - \sigma_t\ I$$

With dP (the differential phase−space volume),

A: $1/c\ \partial I/\partial t dP$ (p/s) represents the time rate of change of particle number in dP.

B: jdP (p/s) represents the rate at which particles are created in dP.

C: $\int\int K_s \ldots dP$ (p/s) represents the rate at which particles scatter into dP.

D: $\Omega \cdot \nabla I dP$ (p/s) represents the rate at which particles acvect out of dP.
Recall that: $\int \Omega \cdot \nabla I\ dV = \oint I\ \Omega \cdot n\ dA$
where n is the unit vector out of the volume.

E: $\sigma_t\ IdP$ (p/s) represents the rate at which particles leave dP through scatter or absorption.