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GRAPPA Student Seminar

Indirect dark matter searches

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Goal of second coding assignments

- In order to estimate the flux of dark matter annihilation, it is important to estimate the line-of-sight integral of density squared
- Get numerical estimates of the so-called astrophysical ***J* factor**

$$J = \int d\Omega \int d\ell \, \rho^2(r(\ell, \Omega))$$

Tasks

1. What is the estimates of r_s and ρ_s for the Milky-Way halo?

2. How does $dJ/d\Omega$ look like as a function of angle subtending from the Galactic center ψ?

3. What is J around the Galactic center within 0.5 degree?

$$\frac{dJ}{d\Omega} = \int d\ell \rho^2(r(\ell, \Omega))$$

- If you upload the preliminary codes by the next session on Friday (e.g., Thursday evening), we are able to give you feedback