

$$E_e = \frac{16}{15} \pi^2 G \rho_0^2 R^5 J(x) \quad \text{avec} \quad J(x) = \frac{5}{4} \frac{9x \cos x \sin x - x^2 (2 \cos^2 x - 5) - 12 \sin^2 x}{x^4 \sin^2 x}$$