$$\rho(\vec{x'}) = \sum_{l',m'} \rho_{l'}^{m'}(r')Y_{l'}^{m'}(\theta',\varphi') \tag{32}$$

$$\Phi(\vec{x}) = 4\pi G \sum_{l,m} \frac{Y_l^m(\theta,\varphi)}{2l+1}\frac{1}{r^{l+1}}\left[\int(r')^{l+2}\rho_l^m(r')dr'\right] \tag{33}$$

$$\Phi_{\mathrm{T}} = \left[\frac{GM}{r} + \frac{1}{3}\Omega^2 r^2\right] - \left[\frac{1}{3}\Omega^2 r^2 + \frac{GM}{r^3}a^2 J_2\right] P_2(\cos\theta) \tag{34}$$

$$-\frac{GM}{r}\sum_{l=2}^{\infty}\sum_{m=-l;(l,m)\neq(2,0)}^{l} \Phi_l^m Y_l^m(\theta,\varphi)\left(\frac{a}{r}\right)^l \tag{35}$$

$$N = \left.\frac{\Delta\Phi}{g_{\mathrm{T}}}\right|_{r=a} \tag{36}$$

$$\Delta\Phi = -\frac{GM}{r}\sum_{l=2}^{\infty}\sum_{m=-l;(l,m)\neq(2,0)}^{l} \Phi_l^m Y_l^m(\theta,\varphi)\left(\frac{a}{r}\right)^l \tag{37}$$

$$N = -a\sum_{l,m}\Phi_l^m Y_l^m \tag{38}$$