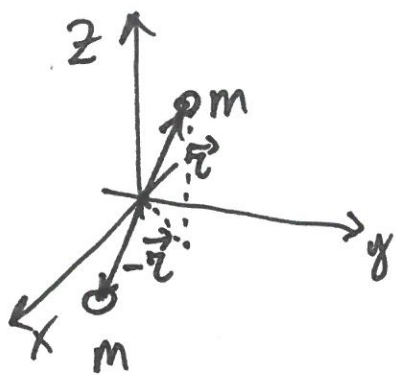


2 OSCILLATING MASSES



$$\vec{r} = a_0 (\sin \theta \cdot \cos \varphi, \sin \theta \cdot \sin \varphi, \cos \theta) \sin(\omega t)$$

$$Q_{11} = Q_{xx} = m\dot{x}^2 + m\dot{x}^2 - \frac{1}{3} 2 \dot{r}^2 m =$$

$$= 2ma_0^2 \left(\sin^2 \theta \cdot \cos^2 \varphi - \frac{1}{3} \right) \sin^2(\omega t)$$

$$Q_{22} = 2m\dot{y}^2 - \frac{1}{3} 2 \dot{r}^2 m = 2ma_0^2 \left(\sin^2 \theta \sin^2 \varphi - \frac{1}{3} \right) \sin^2(\omega t)$$

$$Q_{12} = m\dot{x}\dot{y} + m(-\dot{x})(-\dot{y}) = 2ma_0^2 \sin^2 \theta \cos \varphi \sin \varphi \sin^2(\omega t)$$

$$\frac{Q_{11} - Q_{22}}{2} = \frac{1}{2} 2ma_0^2 \sin^2 \theta (\cos^2 \varphi - \sin^2 \varphi) \sin^2(\omega t)$$

$$Q_{12} = 2ma_0^2 \sin^2 \theta \cos \varphi \sin \varphi \sin^2(\omega t)$$

~~$$h_4 = \frac{1}{2} \frac{2G}{c^4}$$~~

$$\sin^2(\omega t) = \frac{1 - \cos(2\omega t)}{2} \quad \frac{d^2 \sin^2(\omega t)}{dt^2} = 4\omega^2 \cos(2\omega t)$$

$$2 \cos \varphi \sin \varphi = \sin 2\varphi$$

$$\cos^2 \varphi - \sin^2 \varphi = \frac{1 + \cos 2\varphi}{2} - \frac{1 - \cos 2\varphi}{2} = \cos 2\varphi$$

$$h_+ = \frac{1}{2} \frac{2G}{c^4} m a_0^2 \sin^2 \theta \cdot \cos(2\varphi) \cdot 4\omega^2 \cos(2\omega t) =$$

$$= \frac{1}{2} \frac{8G}{c^4} m a_0^2 [\sin^2 \theta \cdot \cos(2\varphi)] \omega^2 \cos(2\omega t)$$

$$h_x = \frac{1}{2} \frac{8G}{c^4} m a_0^2 [\sin^2 \theta \cdot \sin(2\varphi)] \omega^2 \cos(2\omega t)$$