We have stable motion about the 1-axis

b) $\vec{M}^2 \to 2E I_3$ then $M_1 \to 0$, $M_2 \to 0$

then $\left(\frac{I_3}{I_1} - 1\right) M_1^2 + \left(\frac{I_3}{I_2} - 1\right) M_2^2 = 2E M_3 - \vec{M}^2 > 0$

($\frac{I_3}{I_1} - 1 > 0$, $\frac{I_3}{I_2} - 1 > 0$)

motion on ellips about 3 axis ; stable

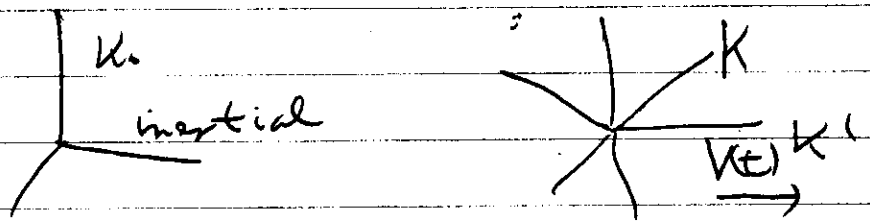
c) $\vec{M}^2 \to 2E I_2$, $M_1 \to 0$, $M_3 \to 0$

$$\left(\frac{I_2}{I_1} - 1\right) M_1^2 + \left(\frac{I_2}{I_3} - 1\right) M_2^2 = 2E I_2 - \vec{M}^2$$

($\frac{I_2}{I_1} - 1 < 0$, $\frac{I_2}{I_3} - 1 > 0$)

hyperbola about x_2 axis $\Rightarrow$ unstable motion

VI.8 Motion in noninertial frames



$\vec{v}_{K_0} = \vec{v}'_{K'} + \vec{V}(t)$

$\vec{v}' = \vec{v} + \vec{\Omega} \times \vec{r}$

in K_0 : $L = \frac{1}{2} m \vec{v}_0^2 - U(r)$

in K' $L = \frac{1}{2} m (\vec{v}' + \vec{V})^2 - U(r)$

$= \frac{1}{2} m v'^2 + \frac{1}{2} 2m \vec{v}' \cdot \vec{V} + \frac{1}{2} m \vec{V}^2 - U(r)$

↑ does not contribute to EL