The Cost of Gliding

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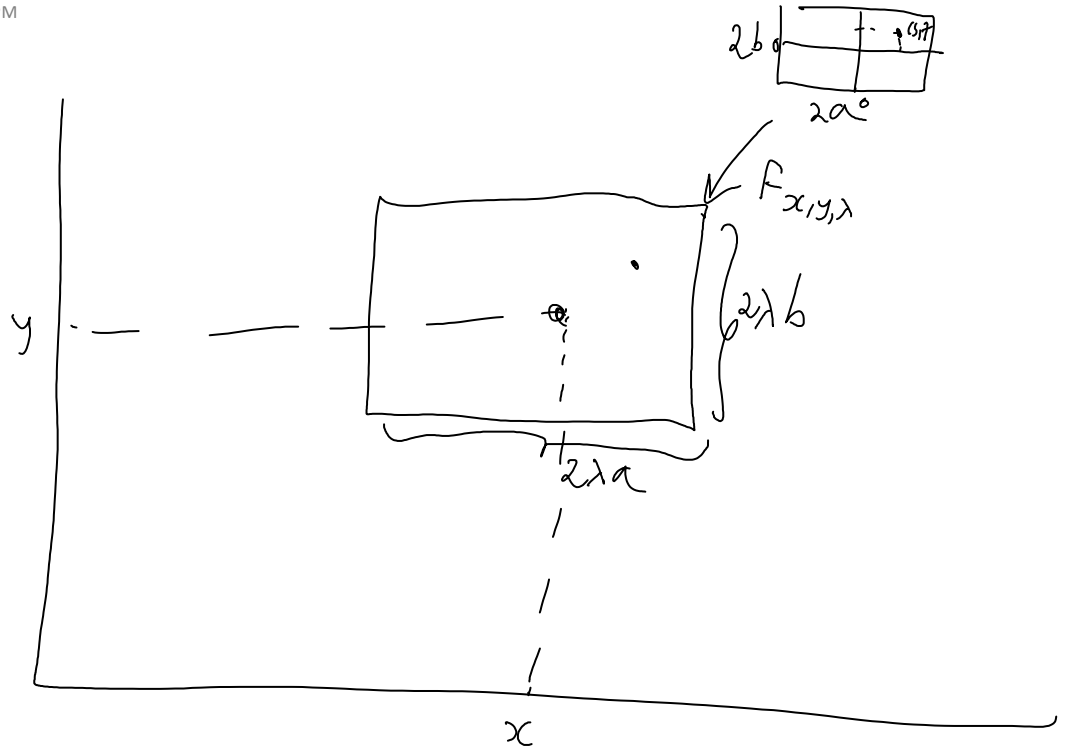

$$F_{x,y,\lambda}(s,t) = (x+\lambda s,\ y+\lambda t)$$

$$T = \xi\frac{\partial}{\partial x} + \eta\frac{\partial}{\partial y} + \rho\frac{\partial}{\partial \lambda}$$

$$\|T\|^2 := \int_{-a}^{a} ds \int_{-b}^{b} dt\, \|F_{x,y,\rho}(s,t)_* T\|^2$$

$$= \int_{-a}^{a} ds \int_{-b}^{b} dt\, \|(\xi + s\rho,\ \eta + t\rho)\|^2$$

$$= \int\int ds\,dt\, (\xi^2 + 2\xi s\rho + s^2\rho^2 + \eta^2 + 2\eta t\rho + t^2\rho^2)$$

$$\sim \xi^2 + \eta^2 + \rho^2$$