1 | Understanding Research Papers

Jack attempting to read through research…

2 | Biggins 2014

2.1 | Problem Setup

Equilibrium curve setup. Treat chain as a bit of a rope, so

- Horizontal change of a ”bead”: dx
- Length of a ”bead”: ds
- Angle by which the bead is above the ground: θ
- Mass density: λ

And hence, $ds = \frac{dx}{sin(\theta)}$, and mass is λds as it is indeed the mass density times length.

2.2 | There is no acceleration?

Apparently the acceleration due to gravity could be ignored… Not sure why/how.

2.3 | Change tension force over time to counter gravity

It seems, it stedy-state does not have an tangent acceleration (circular motion, only acceleration is perpendicular), we *know*?? that the tangent force has to balance gravity. And hence, Biggins claims:

$$\frac{d}{dx}T(x) = \frac{\lambda g}{sin\theta}cos(\theta) \tag{1}$$