Advitiy - Tether simulations

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1 Introduction:

This document deals with day to day work on simulations of satellite deorbiting.

2 Setting B = 0:

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Simulation was tried with magnetic field set to zero. Theta and phi results were as expected. Graph of r is yet to explain. Though the changes in r are very small ($O(10^{-8})$), it would be expected that the initial point would be an apogee or a perigee. Therefore simulation was performed again to get a graph of rdot (checkout the *debugging_r* branch)

V_r graph is weird. Yet to be explained

Initially it was felt that these numerical errors could be reduced by using v_θ, v_ϕ instead of $\dot{\theta}, \dot{\phi}$. But the value of r kept on increasing on doing so. - Behavior yet to be explained