

Physics 267: Problem #8

A ring shaped spaceship with diameter $D = 200$ m uses rotational motion to produce earth like artificial gravity. The angular momentum vector of the rotating ship is perpendicular to the direction of the ship travel. The ship passes by earth at $0.8c$. One point on the ring, the 'bridge', is the only distinguishable external feature. If the angle between the direction of travel and the line from the center of the ring to the 'bridge' is given by θ , find $\theta(t)$ as seen from earth.