

Answer on Question #72285-Physics-Other

Earth's rotation speed=1670km/h

Q. Why Earth does not pull away us from equator to space

Answer

Then force from Earth's rotation is

$$F = \frac{mV^2}{R}.$$

$$a = \frac{V^2}{R} = \frac{\left(\frac{1670}{3.6}\right)^2}{6371000} = 0.03 \frac{m}{s^2} \ll g = 9.81 \frac{m}{s^2}.$$

Thus, the gravitational force holds us from pulling away from equator to space.

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