Foucault precession

A Foucault’s pendulum gradually rotates the direction in which it swings relative to its local environment throughout the day. If it is swinging North-South in the morning, a few hours later it will have precessed to be swinging East-West.

The amount by which it precesses depends on how far North or South of the equator it is hung. In the Northern hemisphere, precession is clockwise, in the Southern it is anticlockwise.

The actual angle precessed over a 24 hour period is given by the formula:

ω = 360° sin λ

where λ is the latitude at which the pendulum is hung.

In the picture, the distance out from the centre is the latitude λ. The angle around the circle between each pair of coloured lines is the how far the pendulum precesses in two hours. The arc drawn at DJCAD’s latitude (56.4566°N) shows that a pendulum here precesses by 300° a day.

Chart

Description automatically generated