



Diagram illustrating the decomposition of the gravity vector \mathbf{g} into components relative to a tilted sensor axis.

The gravity vector \mathbf{g} is shown as a vertical arrow pointing downwards. The sensor axis is shown as a line segment tilted at an angle θ from the vertical. The angle θ is indicated by a curved arrow between the vertical vector and the sensor axis.

The component of gravity along the sensor axis is labeled A_x and is given by the equation:

$$A_x = \|\mathbf{g}\| \cos \theta$$

The component of gravity perpendicular to the sensor axis is labeled A_z and is given by the equation:

$$A_z = \|\mathbf{g}\| \sin \theta$$