

# Coordinate System

## Global Frame

The global frame is such that the x,y origin is at the pinger, and z=0 is at the surface. Yaw is relative to magnetic north. Pitch and Roll are relative to the gravity vector.

## Axes

- X+ - front of the sub
- Y+ - left of the sub
- Z+ - above the sub

## Rotations

- Yaw+ - Counterclockwise around Z+ axis (this is opposite of magnetic) (Yaw **Left** positive)
- Roll+ - Counterclockwise around X+ axis (Roll **Right** is positive)
- Pitch+ - Counterclockwise around Y+ axis (Pitch **Down** is positive)

From:

<http://robosub-vm.eecs.wsu.edu/wiki/> - **Palouse RoboSub Technical Documentation**

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