# Check if Ball Thrower Changes Vertical Angles Correctly

# Summary

## Location & Date

Ground LAB

## Description & Aim

After combining the servo motor with the rest of the ball thrower mechanism, vertical angle changes of the overall system with the proper time limits will be checked. The ground truth is protactor measuring the angle differences, and chronometer measuring the time change.

## Participants

TBD

# Preconditions & Environment Requirements

* Tennis Table
* Balls
* DC Power Supply
* Ball Thrower
* Protactor
* Chronometer

# Scenario

|  |  |  |  |
| --- | --- | --- | --- |
| **Step** | **Data** | **Expected Result** | **Actual Result** |
| Activate ball thrower | - | - | - |
| Activate the mode with 10° angle changes for every time step, and minimize the mass of the ball thrower | - | - |  |
| Time Step 1 - Ball thrower with minimum mass rotates vertical 10° | 10° | Protactor angle should show 10° |  |
| Repeat the previous step 6 times | 20°, 30°, 40°, 50°, 60° | Protactor angle should show 20°, 30°, 40°, 50°, 60° |  |
| Activate the mode with 10° angle changes for every time step, and maximize the mass of the ball thrower |  |  |  |
| Time Step 1 - Ball thrower with maximum mass rotates vertical 10° | 10° | Protactor angle should show 10° |  |
| Repeat the previous step 6 times | 20°, 30°, 40°, 50°, 60° | Protactor angle should show 20°, 30°, 40°, 50°, 60° |  |
| Activate the mode with 10° angle changes for every 3 secs |  |  |  |
| Ball thrower rotates vertical 10° every 3 seconds | 10°, 20°, 30°, 40°, 50°, 60° | Protactor angle should change every 3 seconds and show 10°, 20°, 30°, 40°, 50°, 60° in total 18 seconds |  |