

# **Elucidation of mysterious movement of water and oil on the Istanbul tray**

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Team 06

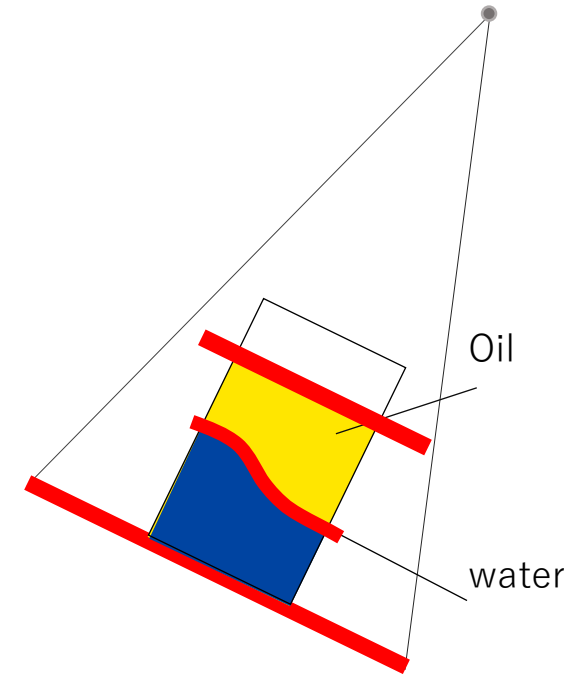
# Background

## 《Istanbul tray phenomenon》

Prepare a container with water and oil.  
And, apply the pendulum movement.



- Oil surface is parallel to the tray.
- Interface of water and oil shakes significantly.



# Method & Experiment

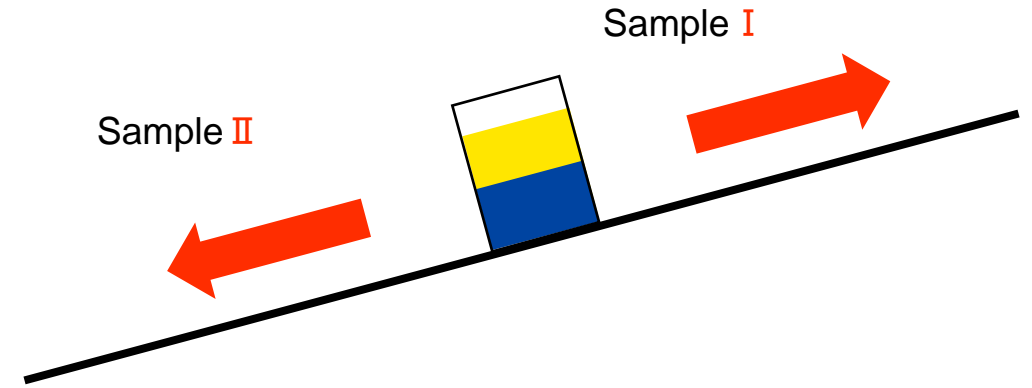
- oil 200 ml
- water 200ml
- 2 dynamics carts
- a vessel
- wood
- wire
- camera
- a board
- springs



▲ Experimental device

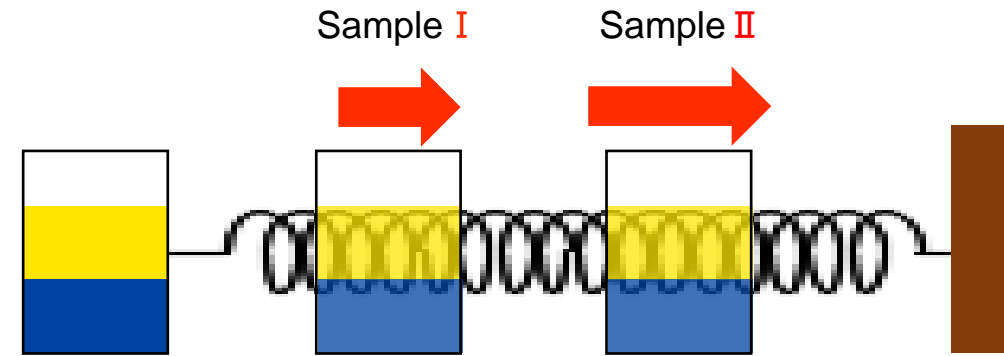
## Experiment [1]

We raised or lowered the device.



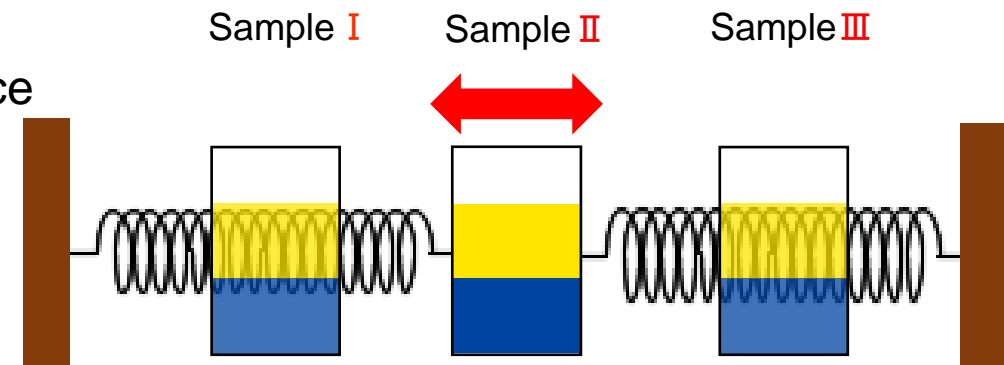
## Experiment [2]

We used a spring to move the container.



## Experiment [3]

We used a spring to produce the reciprocating motion.



# Result

## Experiment 1

Sample 1



Sample 2



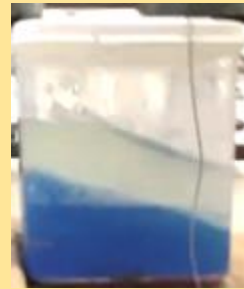
Uniform linear motion

## Experiment 2

Sample 1



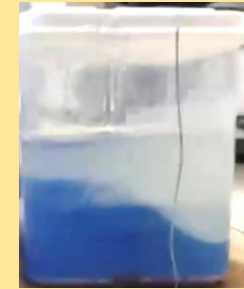
Sample 2



Changing the magnitude of acceleration

## Experiment 3

Sample 1



Sample 2



Sample 3



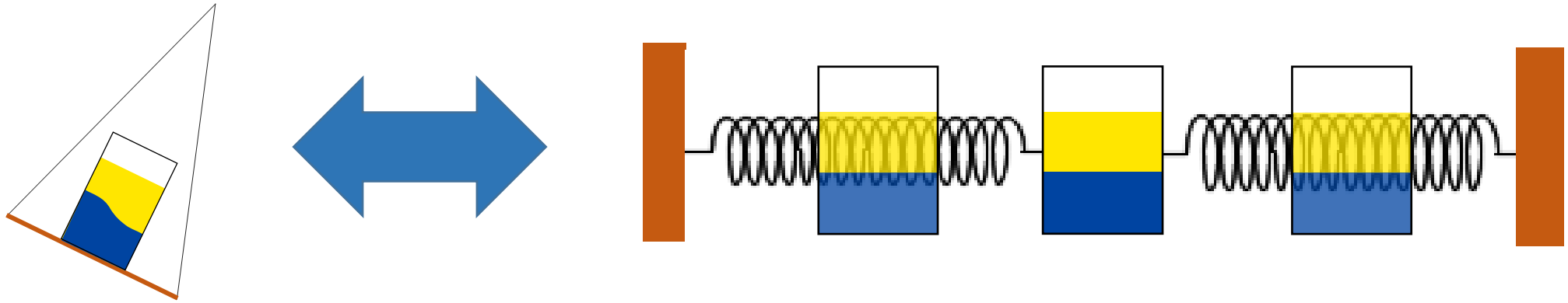
Changing the magnitude and direction of acceleration



Changing acceleration direction causes Istanbul tray phenomenon

# Future work

1. Comparing the results between pendulum and reciprocating



2. Experiment with three-layer liquid

