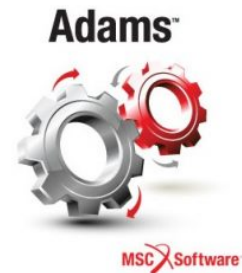


ME370: ADAMS LAB

**Department of Mechanical Engineering,
IIT Bombay**



Session 3 Report

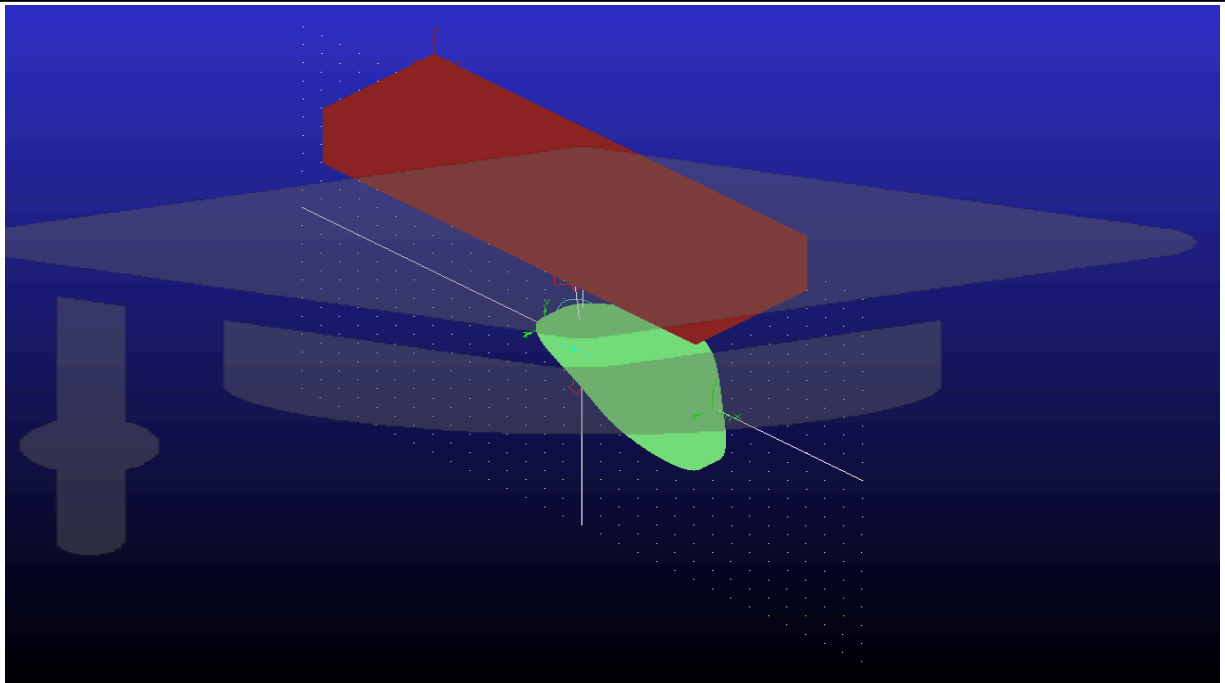
Name: Kavan Vavadiya
Roll Number: 210100166

Date: January 7, 2024

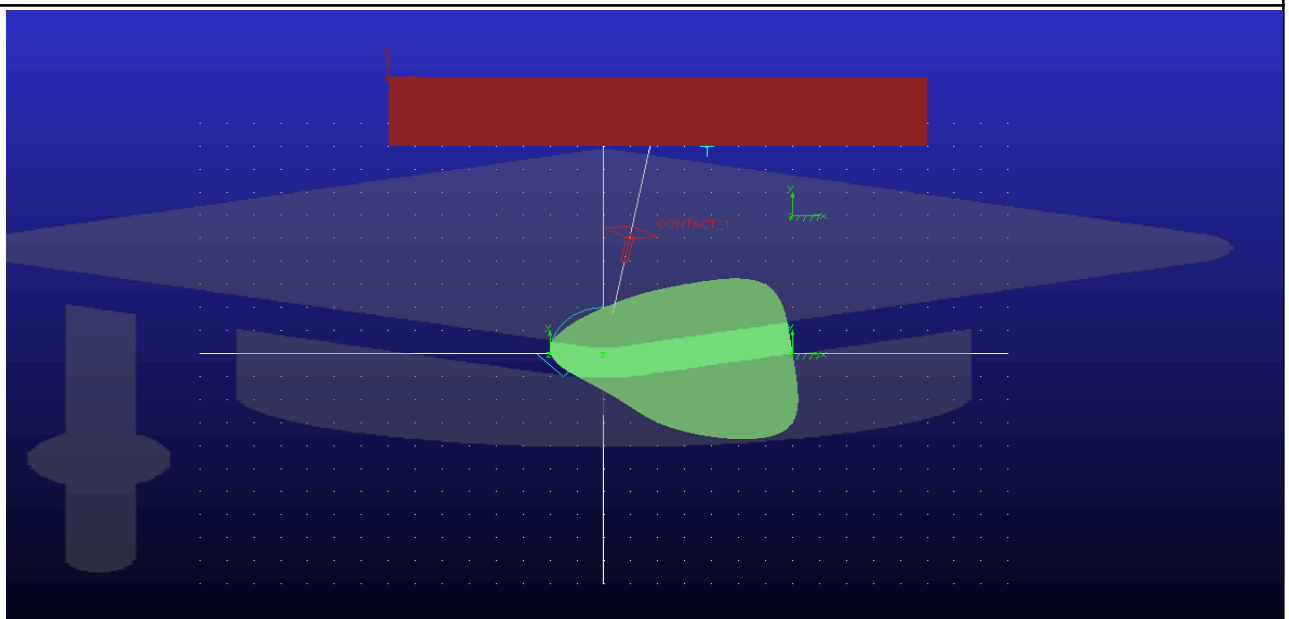
Given Information

Roll Number	X/Offset Ratio
210100166	1.8226

ISOMETRIC VIEW OF CAM-FOLLOWER SYSTEM



FRONT VIEW OF CAM FOLLOWER SYSTEM



Question 1 (In the presence of Gravity)

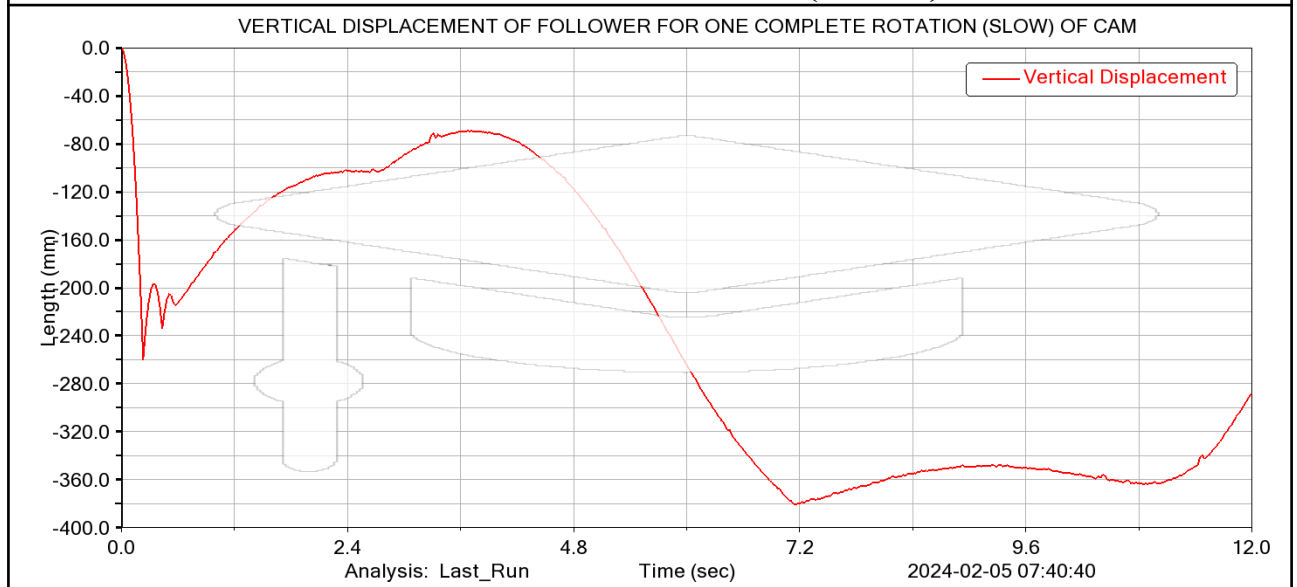
Contact Settings Used:

Slow : 30 Degrees per second

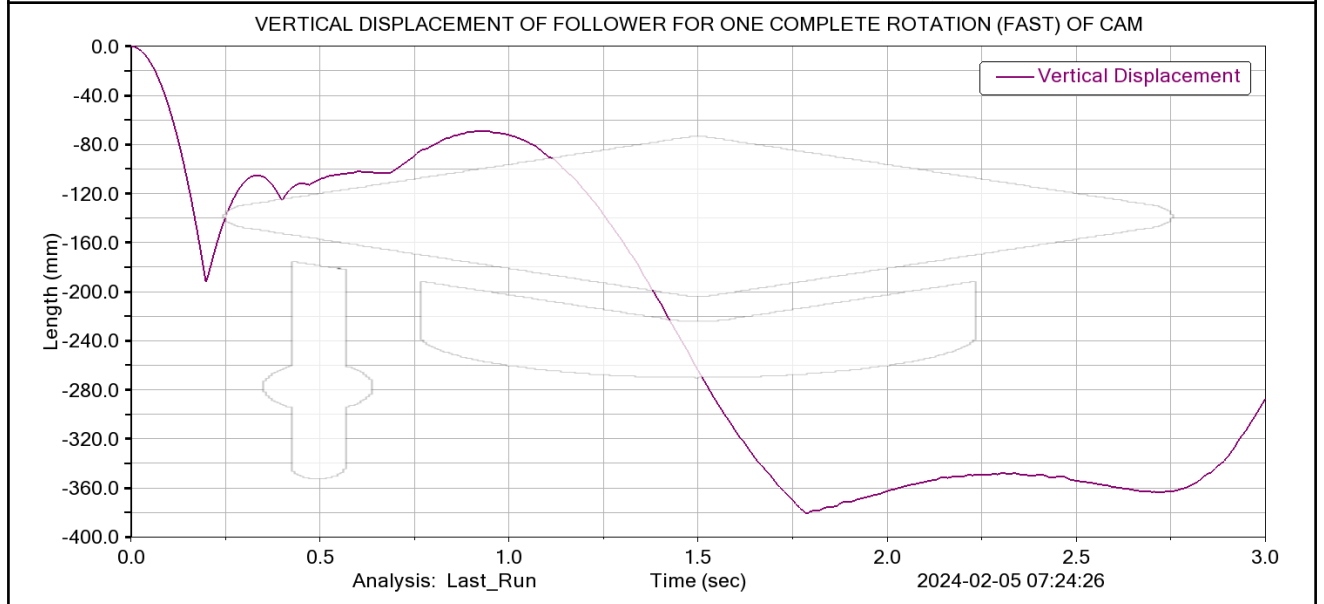
Fast : 120 Degrees per second

Ad Modify Contact	
Contact Name	CONTACT_1
Contact Type	Solid to Solid
I Solid(s)	EXTRUSION_4
J Solid(s)	BOX_2
<input checked="" type="checkbox"/> Force Display	Red
Normal Force	Impact
Stiffness	1.0E+05
Force Exponent	2.2
Damping	10.0
Penetration Depth	0.1
<input type="checkbox"/> Augmented Lagrangian	
Friction Force	None
OK Apply Close	

VERTICAL DISPLACEMENT OF FOLLOWER FOR ONE COMPLETE ROTATION (SLOW) OF CAM



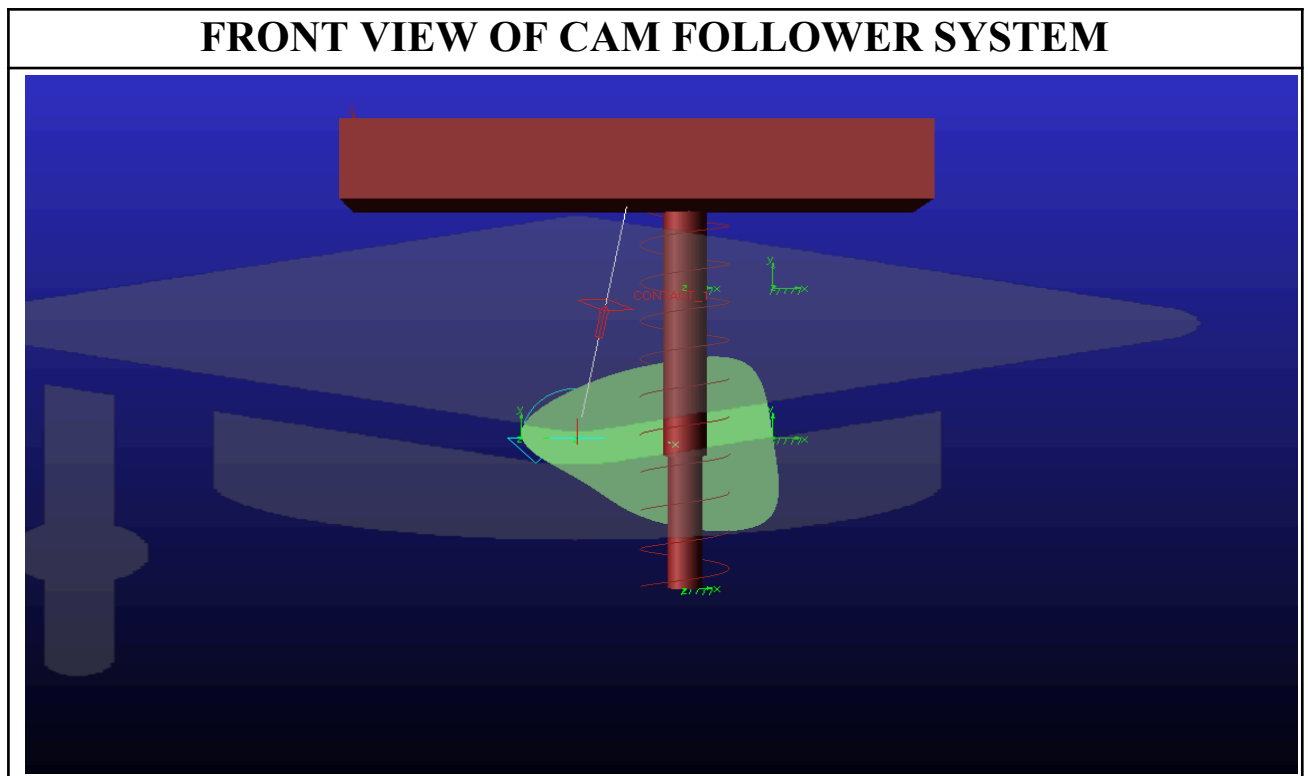
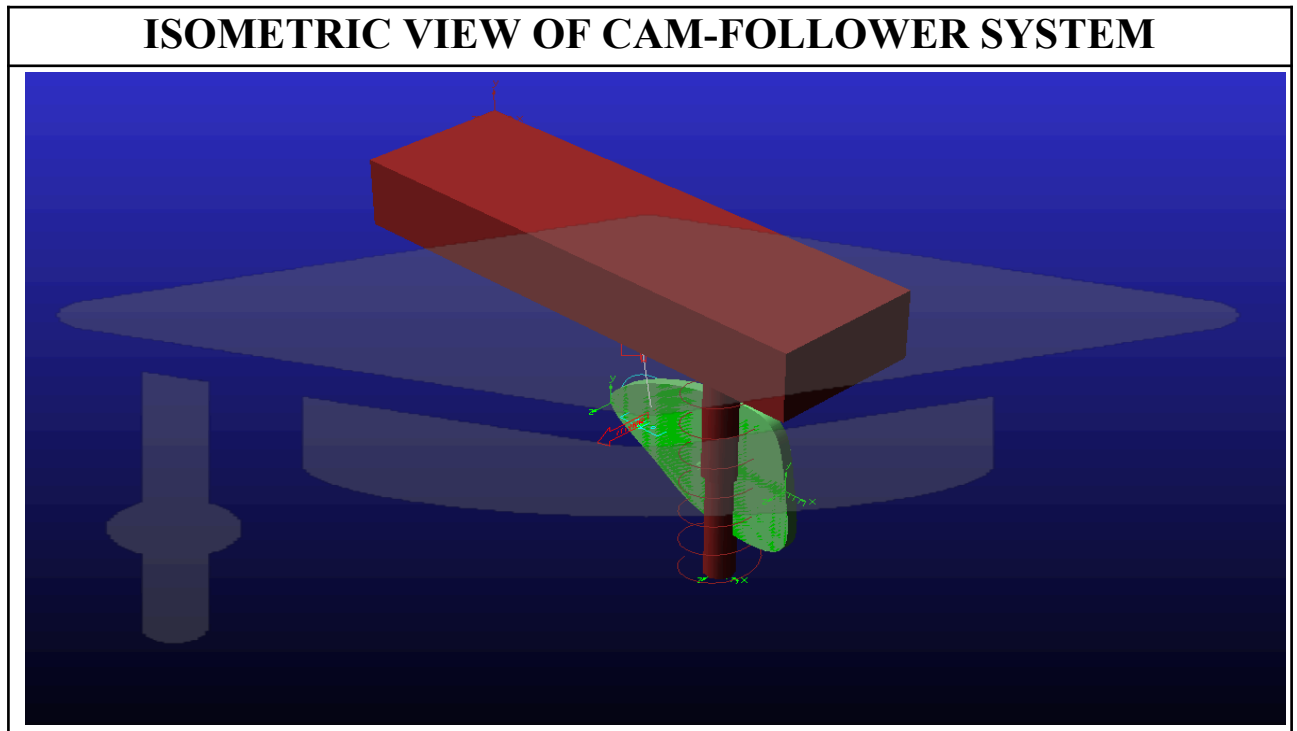
VERTICAL DISPLACEMENT OF FOLLOWER FOR ONE COMPLETE ROTATION (FAST) OF CAM



OBSERVATION:



At a fast rotation speed, the follower moves vertically upward
At a low rotation speed, the follower stays in touch with the CAM.

Question 2 (In the presence of Spring)








Contact Settings and spring properties Used:









Speed: 30 Degrees per second

 **Modify Contact** 

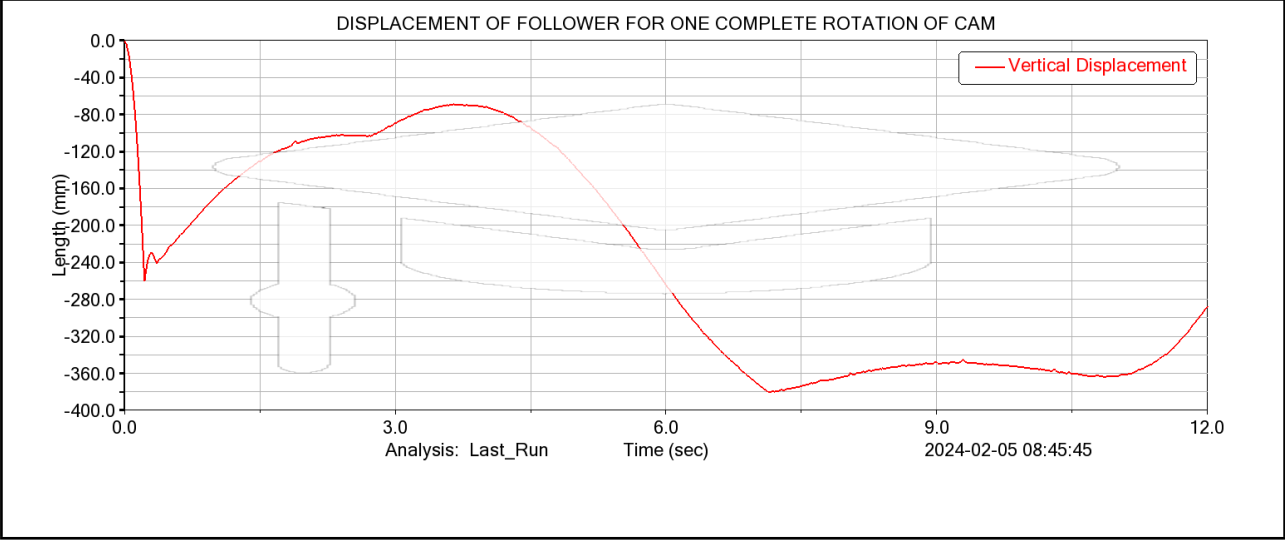
Contact Name	CONTACT_1
Contact Type	Solid to Solid
I Solid(s)	EXTRUSION_4
J Solid(s)	BOX_2
<input checked="" type="checkbox"/> Force Display	Red
Normal Force	Impact
Stiffness	1.0E+05
Force Exponent	2.2
Damping	10.0
Penetration Depth	0.1
<input type="checkbox"/> Augmented Lagrangian	
Friction Force	None

 **Modify a Spring-Damper Force** 

Name	SPRING_1	
Action Body	PART_3	
Reaction Body	ground	
Stiffness and Damping:		
Stiffness Coefficient	(1.4(newton/mm))	
Damping Coefficient	(0.35(newton-sec/mm))	
Length and Preload:		
Preload	-4000.0	
Default Length	(Derived From Design Position)	
Spring Graphic	On, If Stiffness Specified	
Damper Graphic	On, If Damping Specified	
Force Display	On Action Body	
  		
  		

VERTICAL DISPLACEMENT OF FOLLOWER
FOR ONE COMPLETE ROTATION OF CAM



—X—X—X—X— X—X—X —X—**END**— X—X— X—X— X—X— X—X—