Theoretical Mechanics, Lab 5: KIN COMPLEX

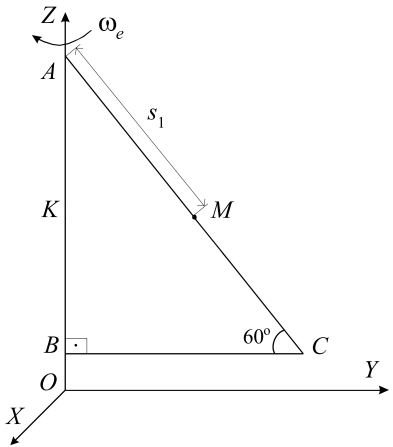
Complex motion

Innopolis University

Task 1 (mine)

The plate ABC rotates around OZ axis with constant angular velocity $\omega_e = -10$. The point M moves along AC side. The motion law is the following $s = s(t) = AM(t) = 4t^3$.

The goal is to determine the velocity and acceleration of M, when $t = 0.5$.

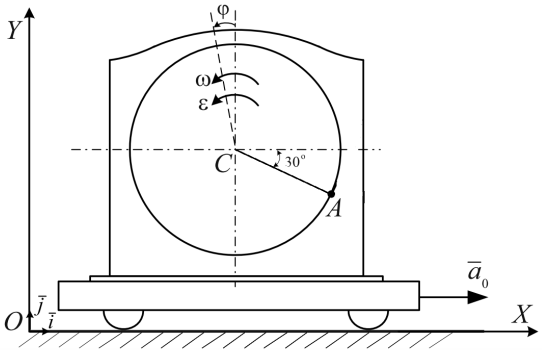


Celtic stone

Chinese spinning top

Task 2 (yours)

A cart has an acceleration $a_0 = 49.3$. Electrical motor on a top has the motion rule $\phi = \phi(t) = t^2$. $CA = R = 20$. Find $\vec{a}_a$ for precise position ($t = 1$).



Deserve “A” grade!

– Oleg Bulichev

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Room 105 (Underground robotics lab)