Week HW 3, COMPLEX

Complex motion

INNOPOLIS UNIVERSITY

Task 1

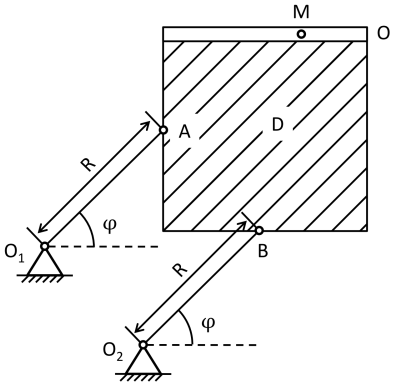
You should find an absolute velocity and coriolis acceleration, and absolute acceleration of particle M at the time $t = t_1$.

Needed variables:

$OM = s_r(t) = f_3(t) = 2t^3 + 3t$;

$\phi(t) = f_2(t) = \frac{1}{24}\pi t^2$;

$t_1 = 2,\ R = 15$.



Task 1
(Yablonskii (eng) K-5)

Task 2 (Coding)

You should find:

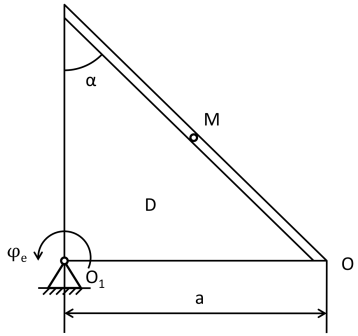
1. simulate this mechanism (obtain all positions);
2. Find absolute, transport and relative velocities and accelerations for *M*;
3. Find *t*, when *M* leave a channel;
4. draw plots v_{rel}, v_{tr}, a_{tr}, a_{rel}, a respect to time.

Needed variables:

$\phi_e = f_1(t) = 0.2t^3 + t$;

$OM = s_r = f_2(t) = 5\sqrt{2}(t^2 + t)$;

$a = 60$, $\alpha = 45$.



Task 2
(Yablonskii (eng) K-6)

Deserve “A” grade!

– Oleg Bulichev

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Room 105 (Underground robotics lab)