

HW3.1. Find the time derivative of a rotation matrix given angular velocity

The orientation of frame 1 in the coordinates of frame 0 is:

$$R_{01} = \begin{bmatrix} -0.63 & 0.27 & 0.73 \\ 0.63 & 0.73 & 0.28 \\ -0.46 & 0.63 & -0.63 \end{bmatrix}$$

The angular velocity of frame 1 with respect to frame 0, written in the coordinates of frame 1, is:

$$w_{01}^1 = \begin{bmatrix} 0.39 \\ 0.73 \\ -0.56 \end{bmatrix}$$

Python

```
import numpy as np

R_1in0 = np.array([[-0.63240749, 0.26806336,
0.72677562], [0.62644976, 0.72885618,
0.27627768], [-0.45565498, 0.63000849,
-0.62886234]])
w_01in1 = np.array([[0.38929899],
[0.73242289], [-0.56061712]])
```

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Find  $\dot{R}_{01}$ :

$\dot{R}_{01} =$

matrix (rtol=0.01, atol=1e-08)

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Single attempt

Save  
only

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Homework 3

Assessment  
overview

Total 23/23  
points:

Score: 80%

Question

Value: 2

History: 1  
2  
2  
2

Awarded points: 2/2

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