

HW4.8. Find velocity of a point on a body given spatial twist

A body has pose  $T_{sb}$  in the spatial frame and has spatial twist  $\mathcal{V}_{sb}^s$ . A point q on the body has homogeneous coordinates in body frame  $q_B$ . What is the velocity of the point q in body frame (in homogeneous coordinates)?

Python

```
import numpy as np

T_sb = np.array([[-0.10964541, -0.21377492,
-0.97071014, 0.04690965], [0.16050561,
-0.96758945, 0.19495794, -0.49704143],
[-0.98092601, -0.13442818, 0.14040382,
-0.85381423], [0.00000000, 0.00000000,
0.00000000, 1.00000000]])
V_sb_in_s = np.array([[0.49027522],
[0.20370312], [-0.35651407], [0.75657983],
[-0.72250627], [1.07287482]])
q_B = np.array([[0.58546731], [-0.78583196],
[1.84758088], [1.00000000]])
```

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$\dot{q}_B =$

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



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Single attempt

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Homework 4

Assessment  
overview

Total 22/22  
points:

Score: 110%

Question

Value: 2

History: 1  
2

Awarded points: 2/2

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