

SC 651: Estimation on Lie Groups

Spring 2024

Assignment-3

Recall that in the previous assignment, you solved the Wahba's problem i.e. estimated a rotation matrix M that transforms v_i to w_i for the following data:

v_i	w_i
(0.63, 0.45, 0.87)	(0.17, 0.03, 0.50)
(0.03, 0.40, 0.86)	(0.26, 0.37, 0.15)
(0.86, 0.17, 0.16)	(0.78, 0.65, 0.67)
(0.29, 0.79, 0.04)	(0.83, 0.96, 0.82)
(0.60, 0.38, 0.15)	(0.69, 0.72, 0.04)
(0.99, 0.43, 0.76)	(0.64, 0.77, 0.34)

using Wahba's algorithm. Now, first apply the **TRIAD** algorithm for the first two rows of data and get an estimate for M . Then, apply the **QUEST** algorithm for the same data and get another estimate for M . Finally, compare all the three estimates for the rotation matrix M .