main\_opt\_v20

---------- START RUNNING: 09-Jun-2023 11:29:44 ----------

---------- INPUT USERS SETTING FOR OPTIMIZATION ----------

---------- PREPROCESS ----------

---------- START OPTIMIZATION ----------

\*\* START: Find x0 with bestfval < 0.05

\* Find x0: 1 times

Best Mean Stall

Iteration f-count f(x) f(x) Iterations

0 60 0.2004 NaN 0

1 120 0.2004 0.97 0

2 180 0.1938 0.8185 0

3 240 0.1938 0.9086 1

4 300 0.1938 0.9035 2

5 360 0.1938 0.9425 3

6 420 0.1938 0.8927 4

7 480 0.1141 0.8846 0

8 540 0.1141 0.8779 1

9 600 0.1141 0.8679 2

10 660 0.1141 0.9123 3

11 720 0.1042 0.8544 0

12 780 0.1042 0.7115 1

13 840 0.1042 0.6998 2

14 900 0.09316 0.6226 0

15 960 0.08996 0.4893 0

16 1020 0.07395 0.5408 0

17 1080 0.06436 0.4615 0

18 1140 0.0623 0.3859 0

19 1200 0.06229 0.4668 0

20 1260 0.05636 0.4624 0

21 1320 0.04622 0.3944 0

Optimization stopped by a plot function or output function.'

\* Find x0: 512.6971 566.8263 0.202855 0.15225 0.1993417 0.1967025

\* exitflag: -1

\*\* END: Find x0 with bestfval < 0.05

\*\*\* Find x0: 1222.5 seconds

\*\* START: Find x with bestfval < 0.0001

\* Find x: 1 times

Max

Iter Func-count f(x) Constraint MeshSize Method

0 1 0.0934847 0.0985 1

1 642 0.00561211 0 0.009772 Update multipliers

2 1144 0.000121355 0 0.000955 Update multipliers

3 1478 0.000121355 0 9.333e-05 Update multipliers

4 1818 0.000112889 0 0.001 Increase penalty

5 2107 0.000107041 0 9.333e-07 Update multipliers

Optimization terminated: mesh size less than options.MeshTolerance

and constraint violation is less than options.ConstraintTolerance.

\* Find x: 624.601 435.2639 0.1156028 0.1320595 0.2723561 0.192307

\* exitflag: 1

\*\* END: Find x

\*\*\* Find x: 3420 seconds

OPT parameter: 624.601 435.2639 0.1156028 0.1320595 0.2723561 0.192307

---------- SHOW OPTIMAL RESULTS ----------

Target muscle parameter:

624.3000 0.1157 0.2723

435.5600 0.1321 0.1923

Optimal muscle parameter:

624.6010 0.1156 0.2724

435.2639 0.1321 0.1923

Motion 1 joint angle prediction error: 2.9e-05

Motion 1 joint speed prediction error: 0.000104

Motion 2 joint angle prediction error: 1.6e-05

Motion 2 joint speed prediction error: 0.000111

---------- VALIDATE OPTIMAL RESULTS ----------

Validate motion joint angle prediction error: 0.0025

Validate motion joint speed prediction error: 0.0056

---------- END RUNNING: 09-Jun-2023 12:47:38 ----------

{

"mot\_desired":

[

{

"direction": 1,

"shoulder\_angle": 0,

"elbow\_angle": [[0, 90]]

},

{

"direction": 1,

"shoulder\_angle": 0,

"elbow\_angle": [[0, 130]]

}

],

"mot\_validate":

{

"direction": -1,

"shoulder\_angle": 180,

"elbow\_angle": [[0, 90]]

},

"file":

{

"model": "arm26\_2500g.osim",

"setup\_cmc": "xml\_setup\_CMC.xml",

"setup\_fwd": "xml\_setup\_FWD.xml"

},

"interest":

{

"muscle\_name": [["BIClong"], ["BICshort"]],

"param\_bool": [[1, 1, 1], [1, 1, 1]]

},

"opt\_settings":

{

"lb": [[100, 0.05, 0.05], [100, 0.05, 0.05]],

"ub": [[1000, 0.35, 0.35], [1000, 0.35, 0.35]]

}

}

