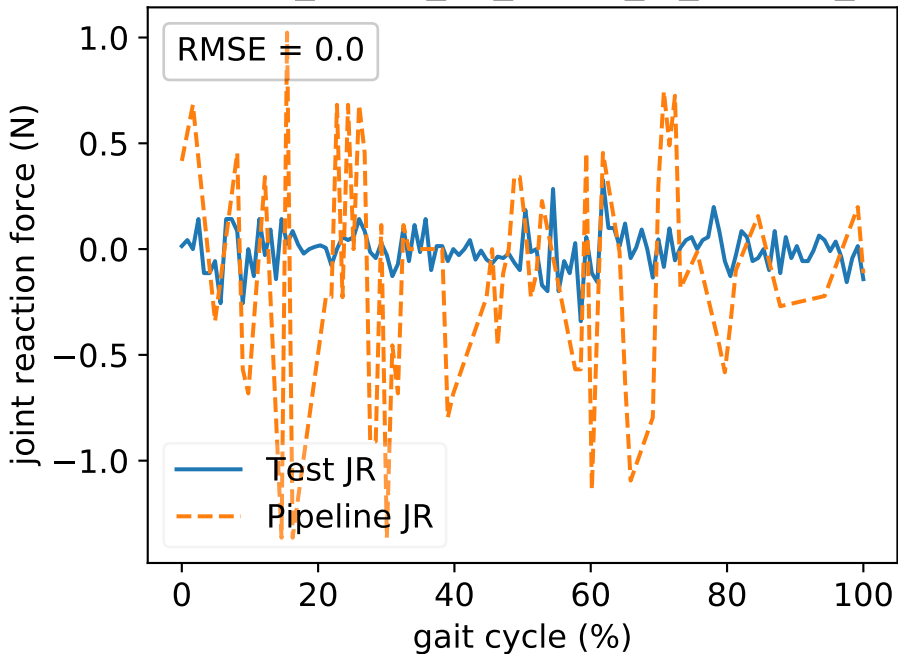
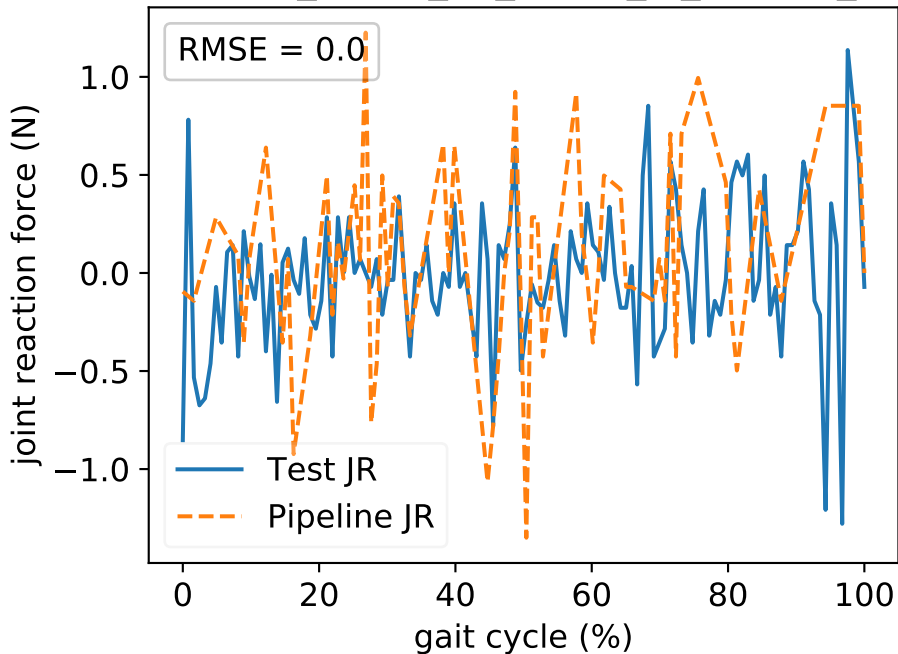


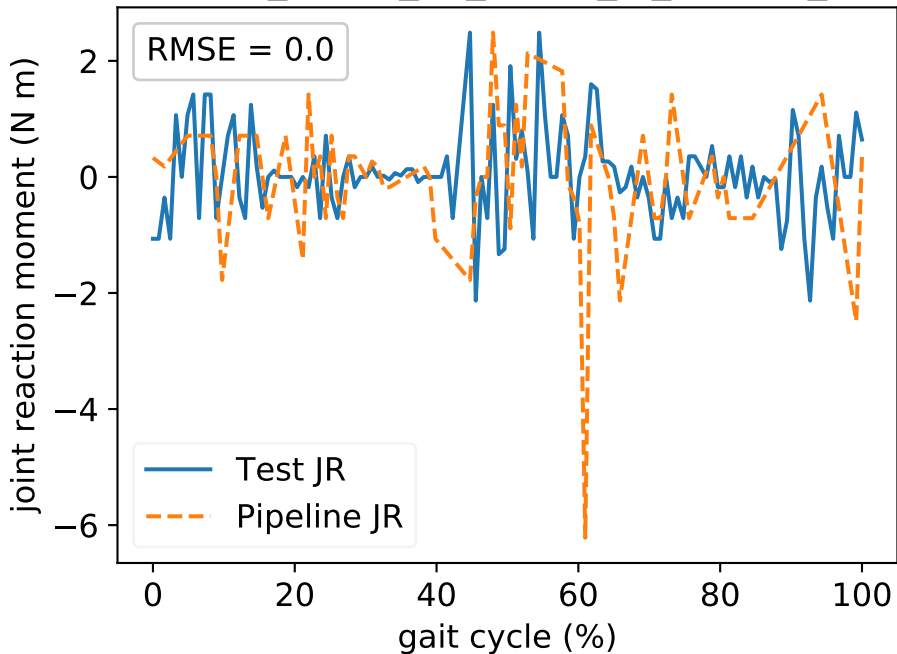
ground\_pelvis\_on\_pelvis\_in\_ground\_fy



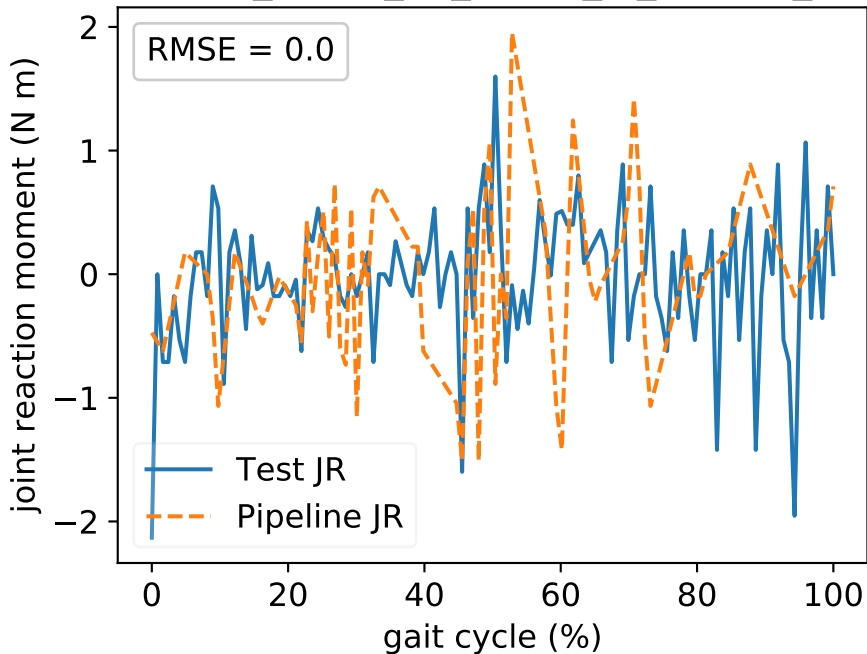
ground\_pelvis\_on\_pelvis\_in\_ground\_fz



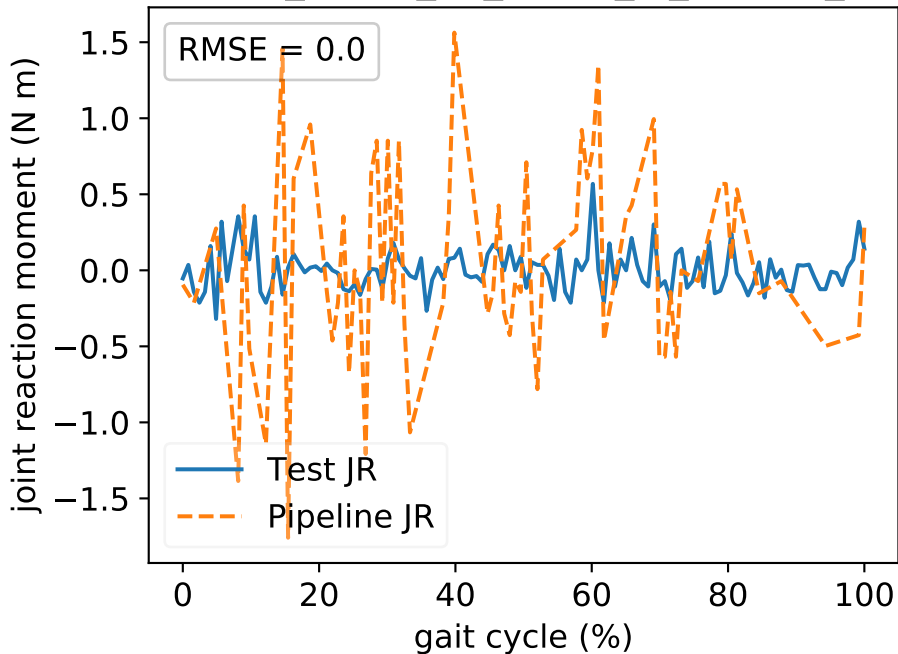
ground\_pelvis\_on\_pelvis\_in\_ground\_mx



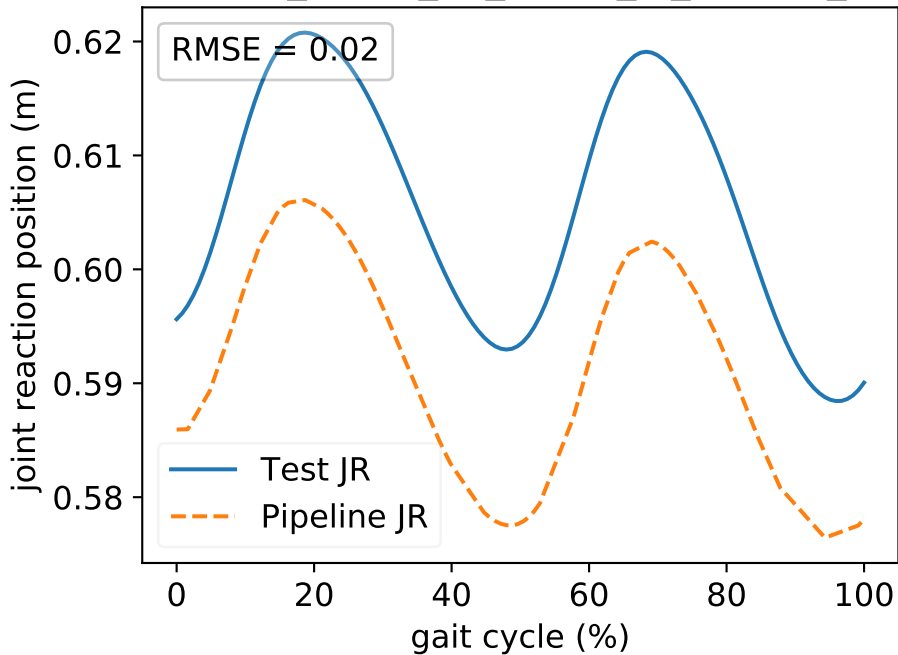
ground\_pelvis\_on\_pelvis\_in\_ground\_my



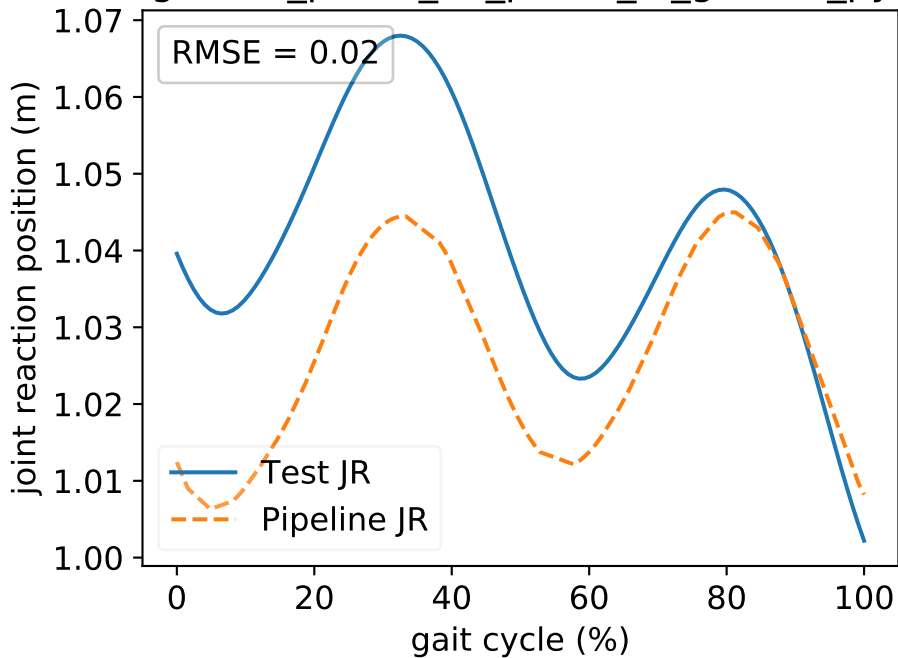
ground\_pelvis\_on\_pelvis\_in\_ground\_mz



# ground\_pelvis\_on\_pelvis\_in\_ground\_px

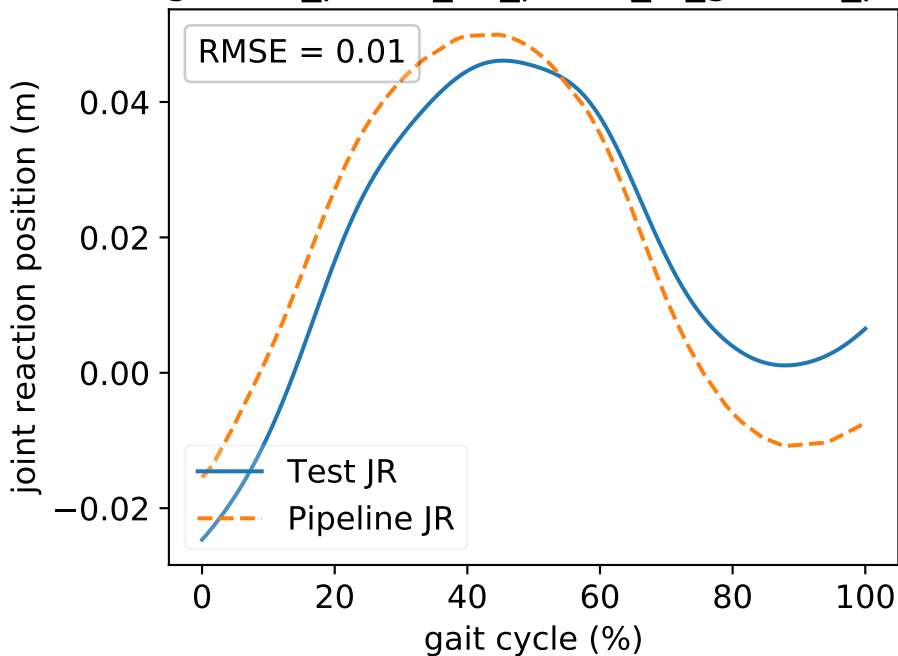


ground\_pelvis\_on\_pelvis\_in\_ground\_py

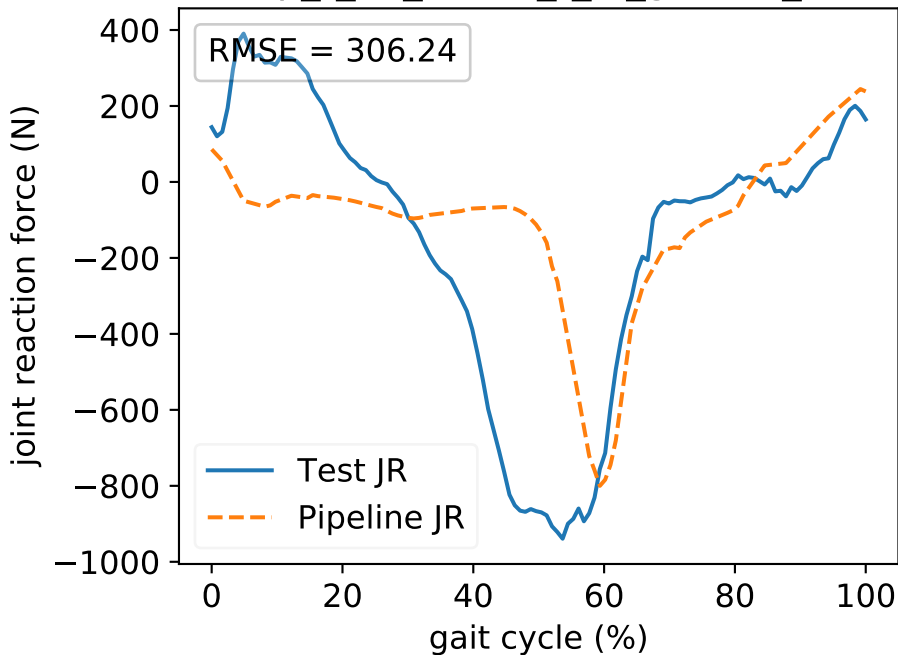




ground\_pelvis\_on\_pelvis\_in\_ground\_pz



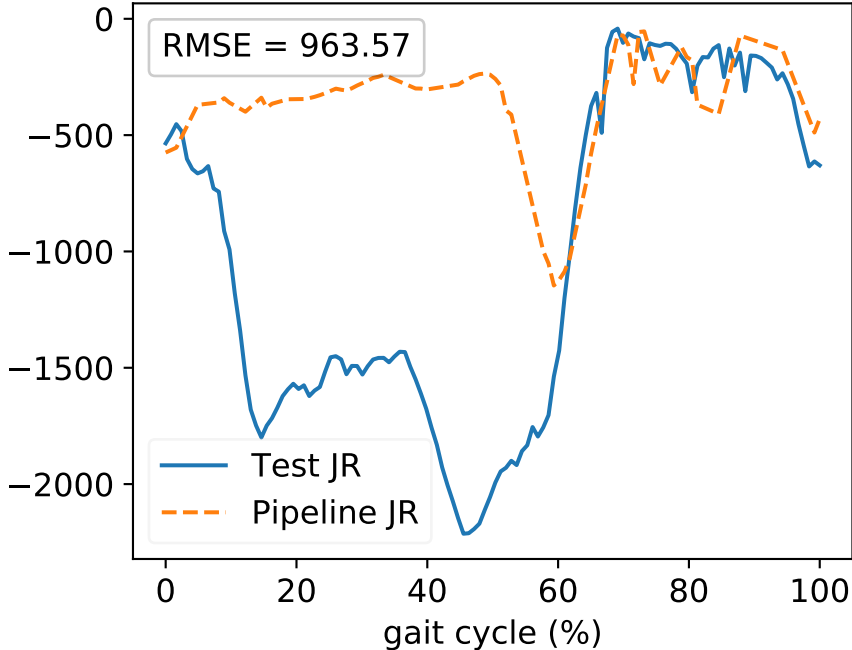
# hip\_r\_on\_femur\_r\_in\_ground\_fx



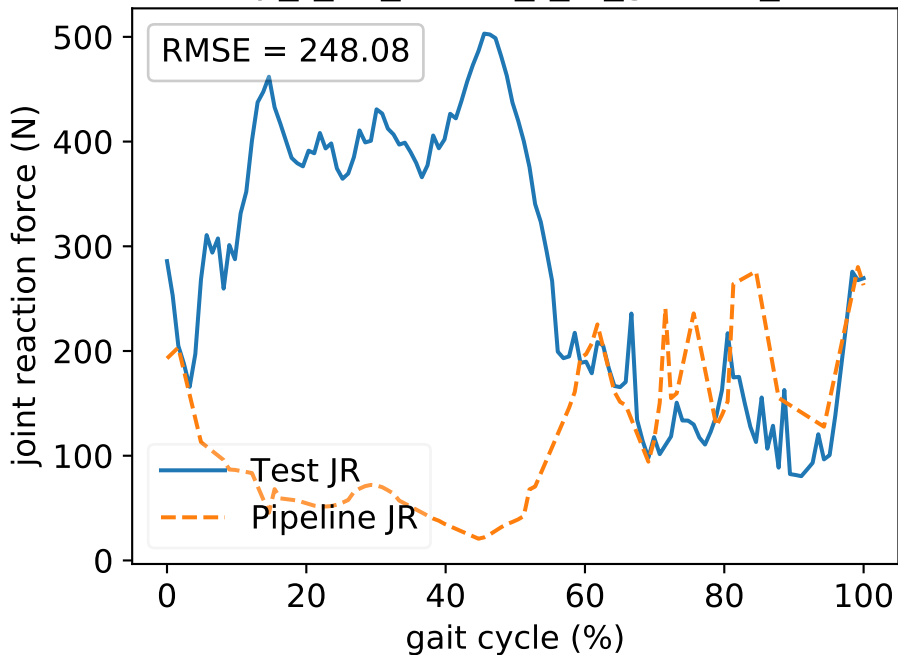
# hip\_r\_on\_femur\_r\_in\_ground\_fy

RMSE = 963.57

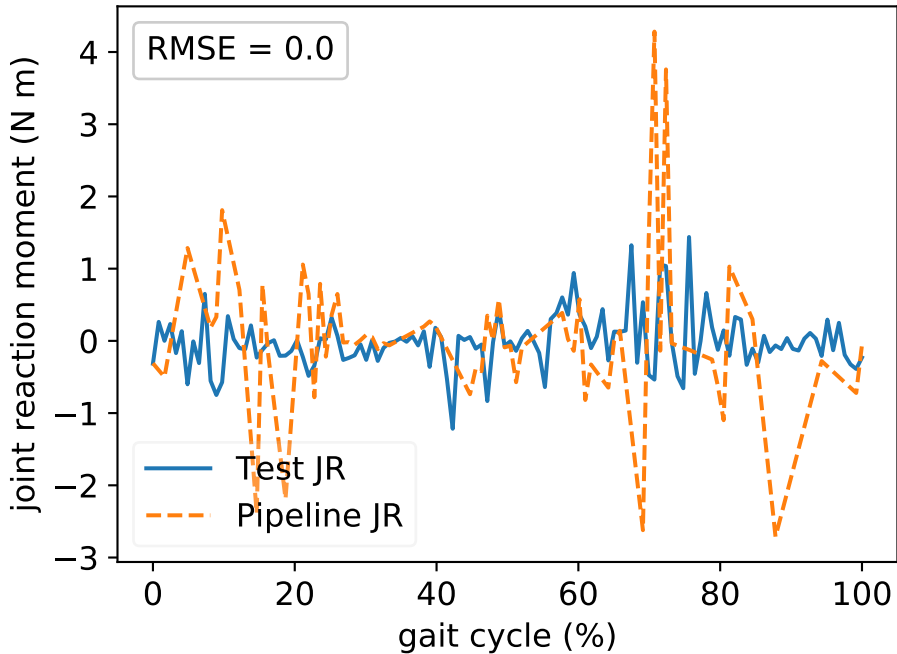
joint reaction force (N)



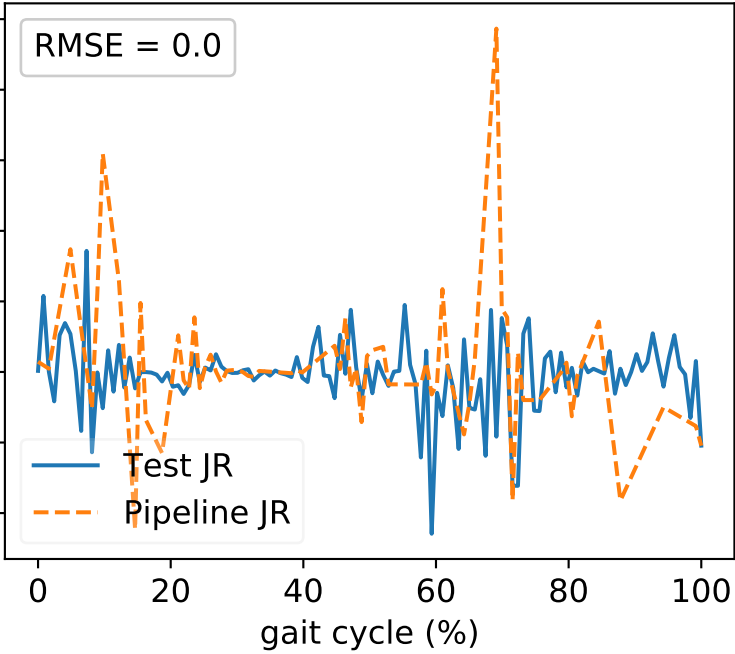
# hip\_r\_on\_femur\_r\_in\_ground\_fz



1e-13 hip\_r\_on\_femur\_r\_in\_ground\_mx



hip\_r\_on\_femur\_r\_in\_ground\_my



hip\_r\_on\_femur\_r\_in\_ground\_mz

joint reaction moment (N m)

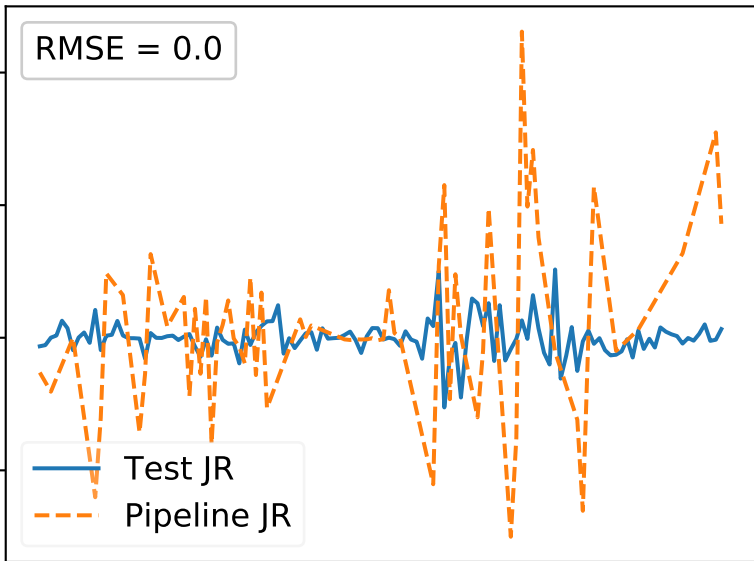
RMSE = 0.0

2  
1  
0  
-1

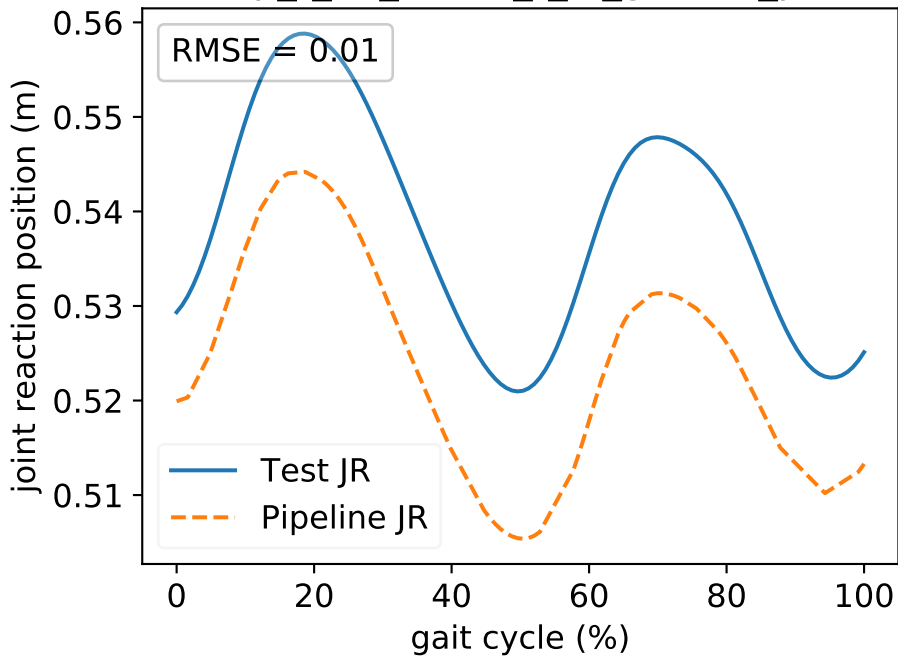
Test JR  
Pipeline JR

0 20 40 60 80 100

gait cycle (%)

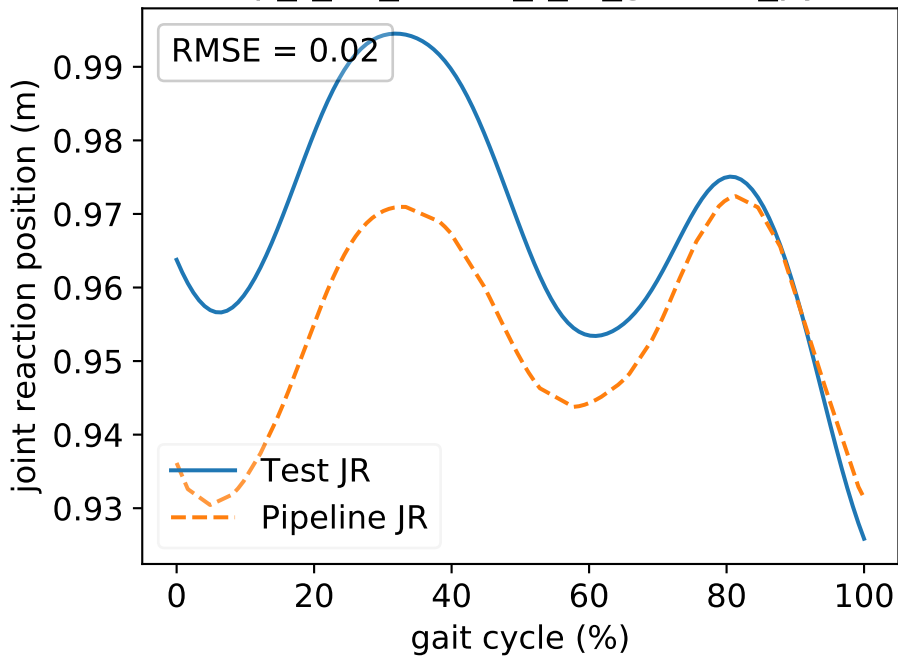


# hip\_r\_on\_femur\_r\_in\_ground\_px

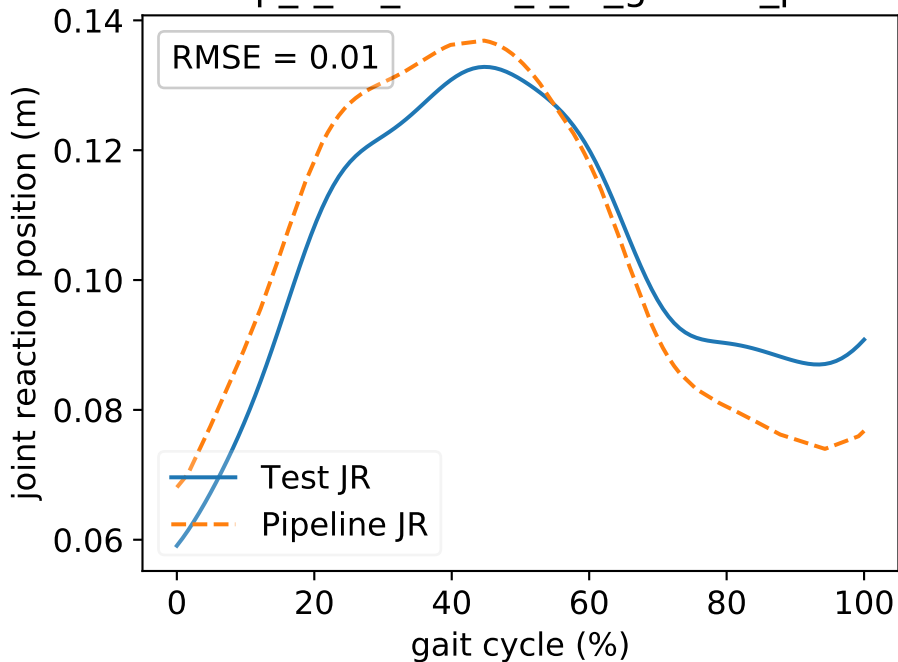




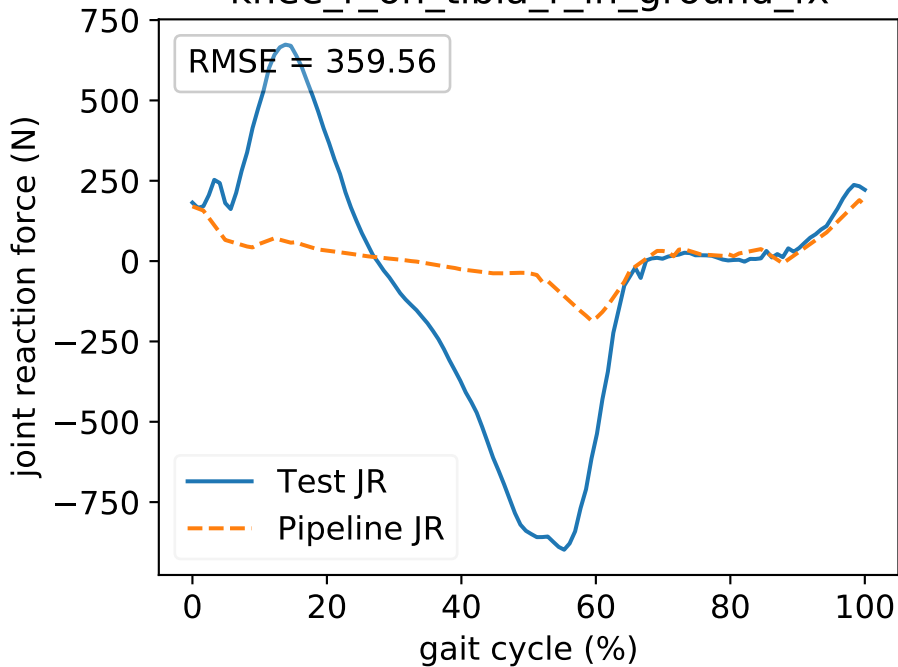
# hip\_r\_on\_femur\_r\_in\_ground\_py



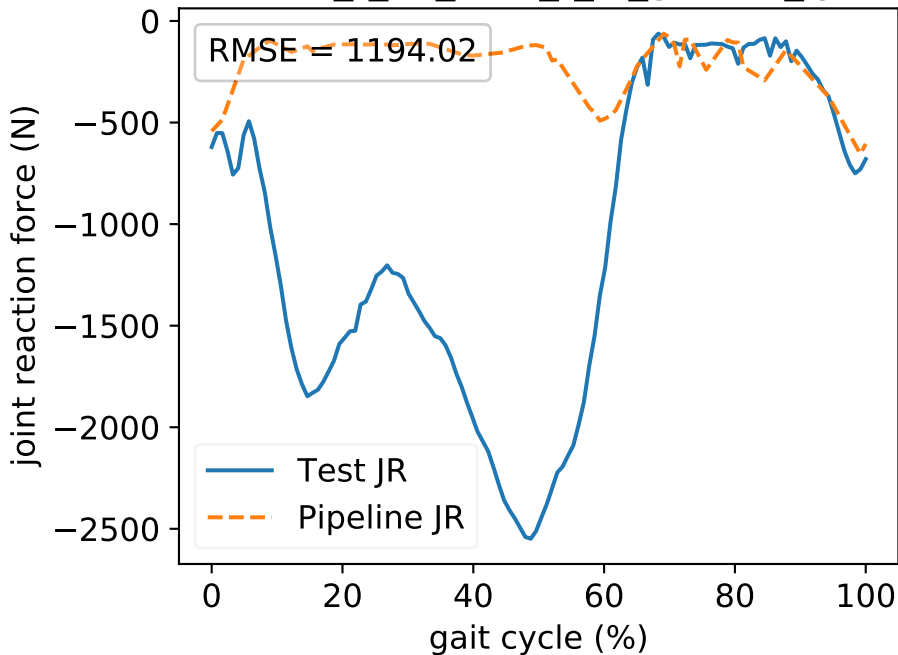
# hip\_r\_on\_femur\_r\_in\_ground\_pz



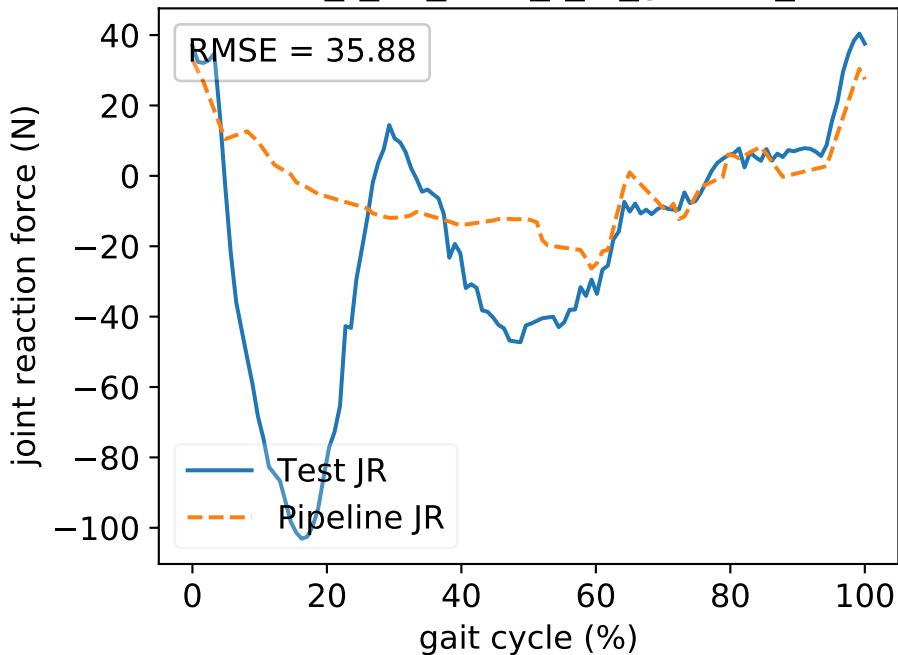
# knee\_r\_on\_tibia\_r\_in\_ground\_fx



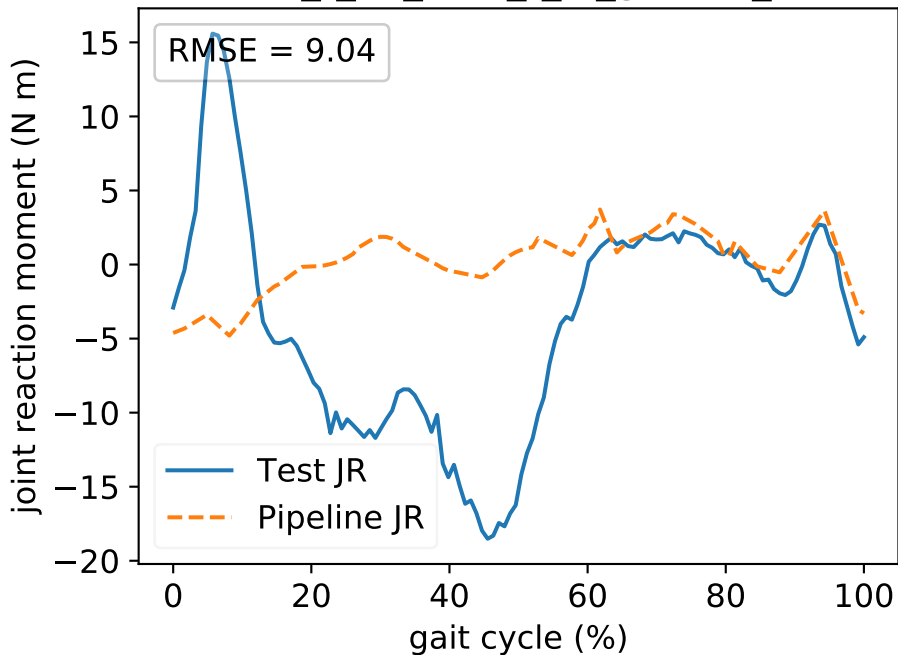
# knee\_r\_on\_tibia\_r\_in\_ground\_fy



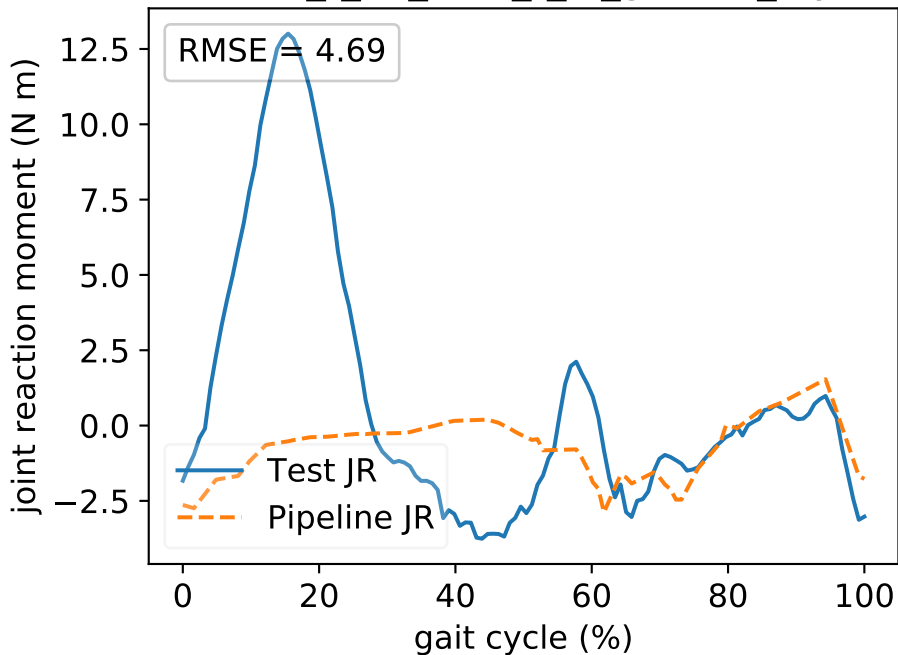
# knee\_r\_on\_tibia\_r\_in\_ground\_fz



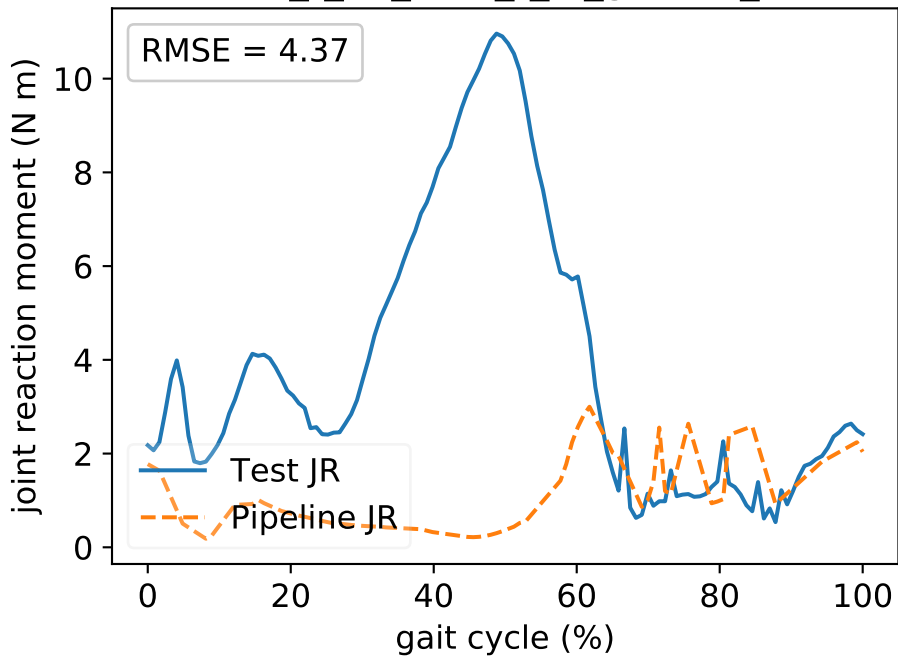
# knee\_r\_on\_tibia\_r\_in\_ground\_mx



# knee\_r\_on\_tibia\_r\_in\_ground\_my

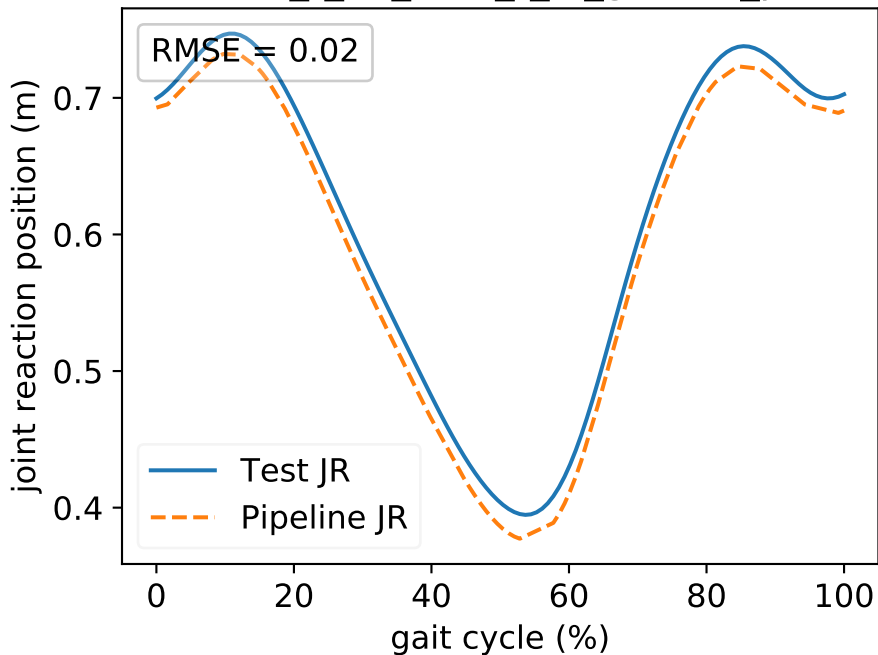


# knee\_r\_on\_tibia\_r\_in\_ground\_mz

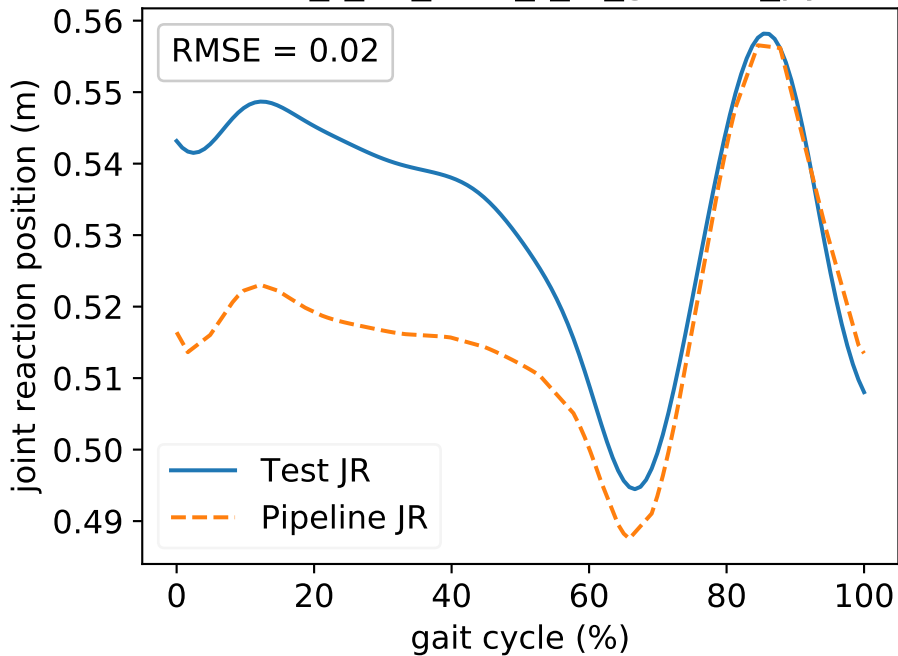




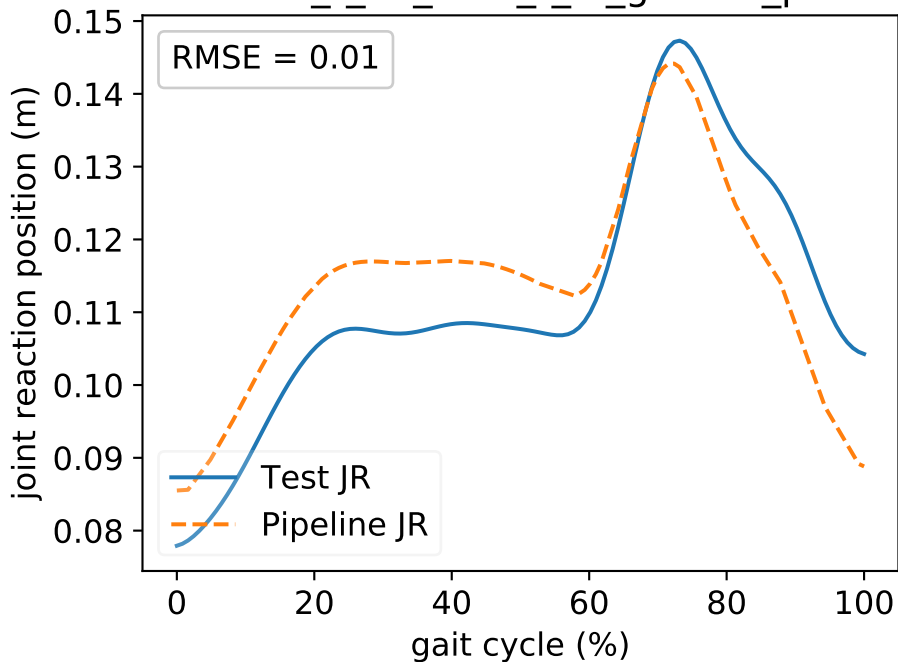
# knee\_r\_on\_tibia\_r\_in\_ground\_px



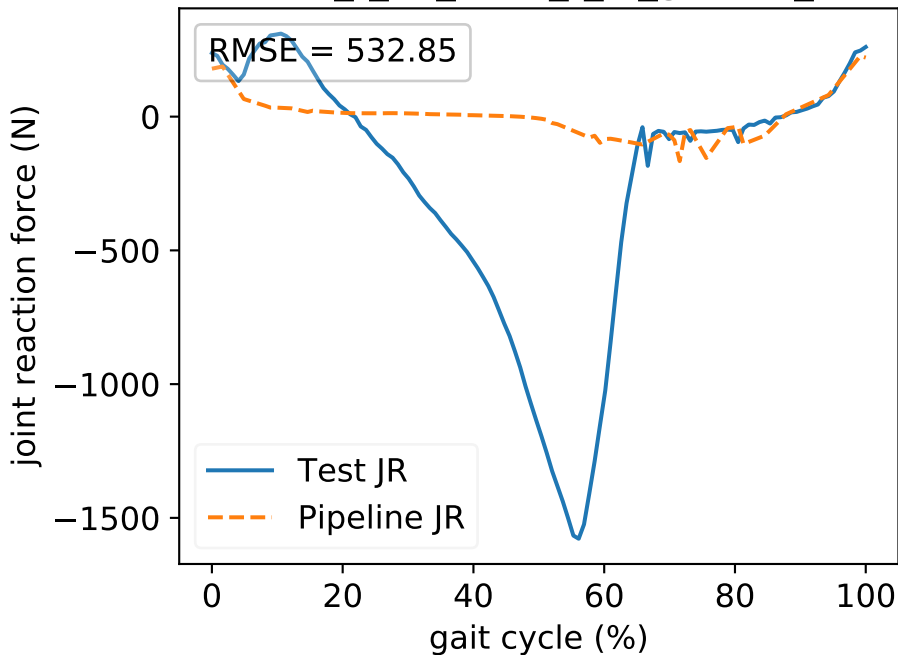
# knee\_r\_on\_tibia\_r\_in\_ground\_py



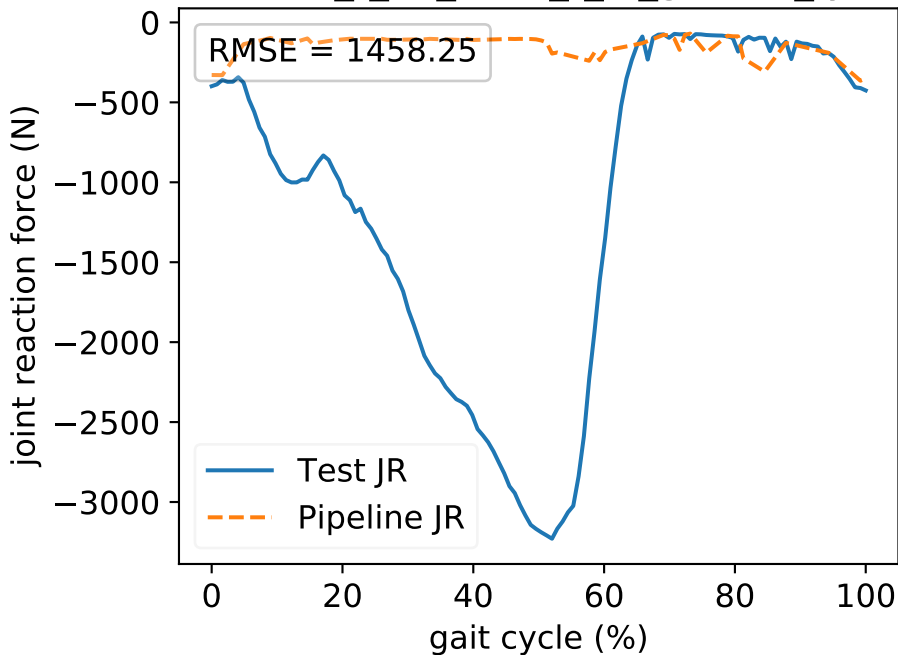
# knee\_r\_on\_tibia\_r\_in\_ground\_pz



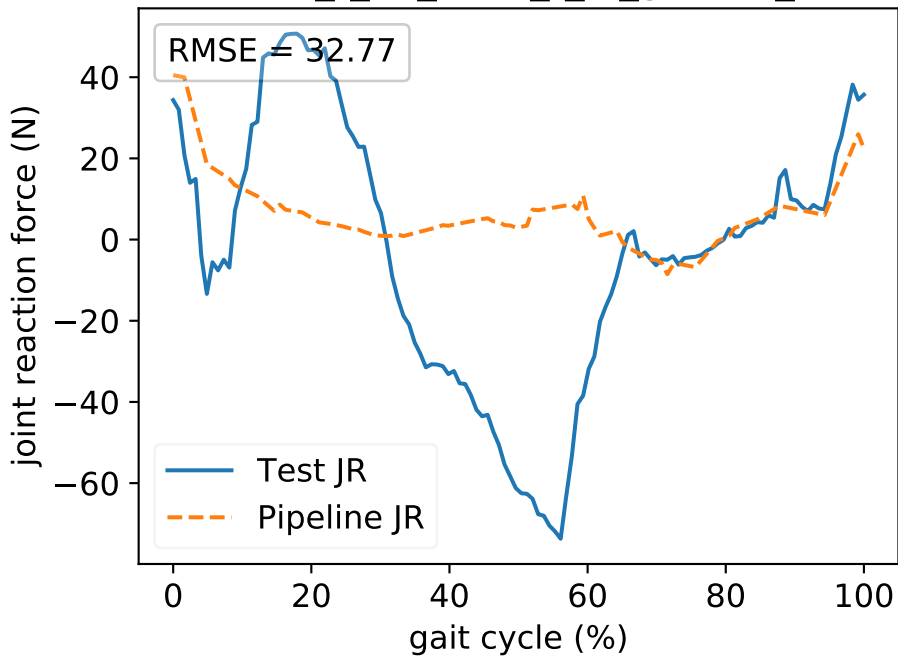
# ankle\_r\_on\_talus\_r\_in\_ground\_fx



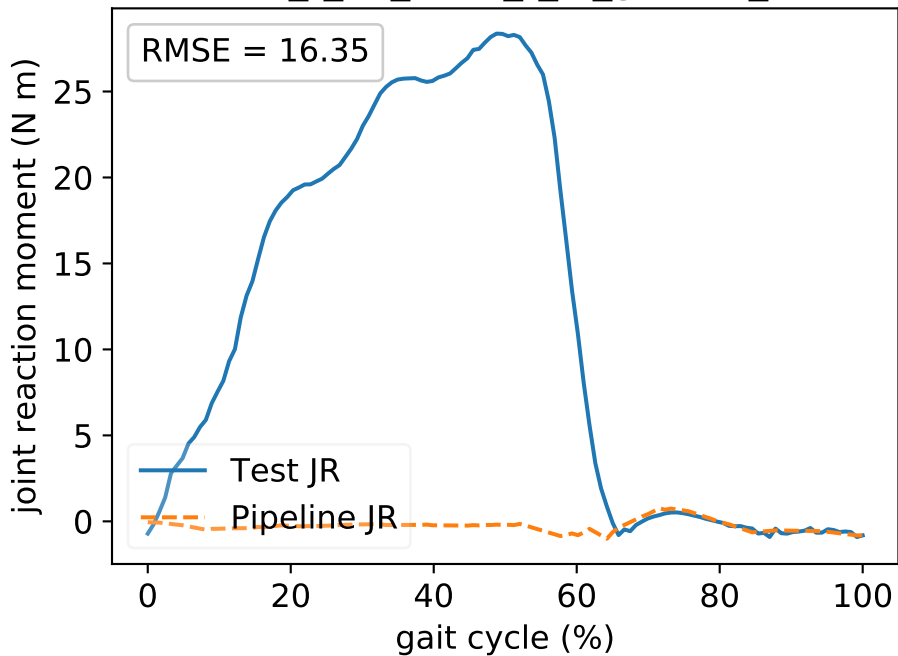
# ankle\_r\_on\_talus\_r\_in\_ground\_fy



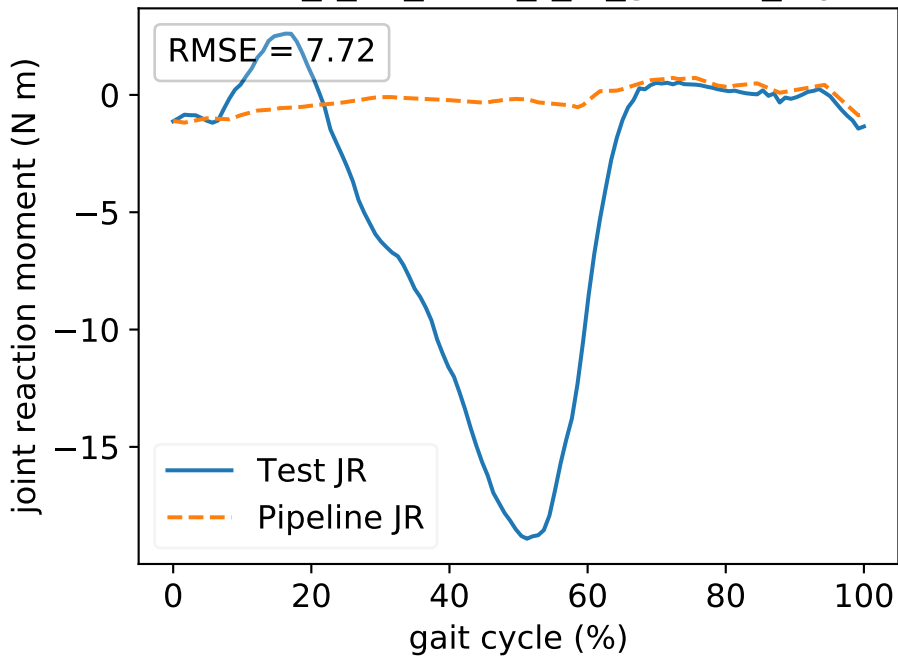
# ankle\_r\_on\_talus\_r\_in\_ground\_fz



# ankle\_r\_on\_talus\_r\_in\_ground\_mx

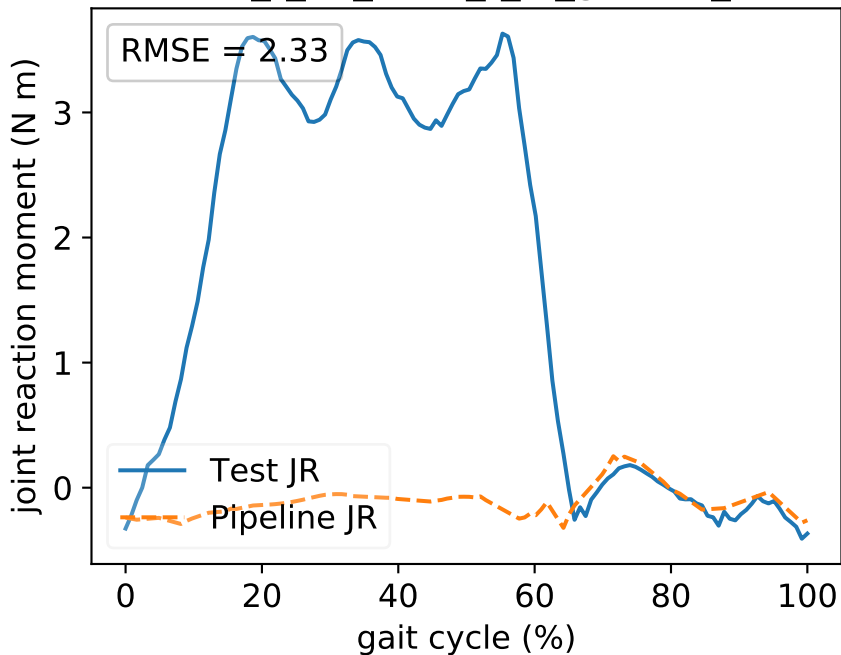


# ankle\_r\_on\_talus\_r\_in\_ground\_my

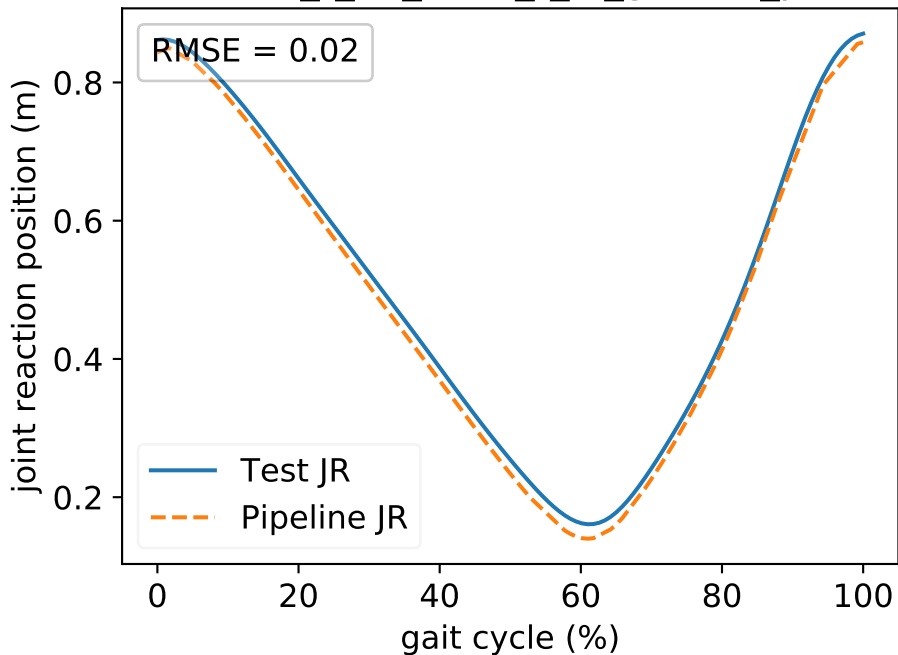




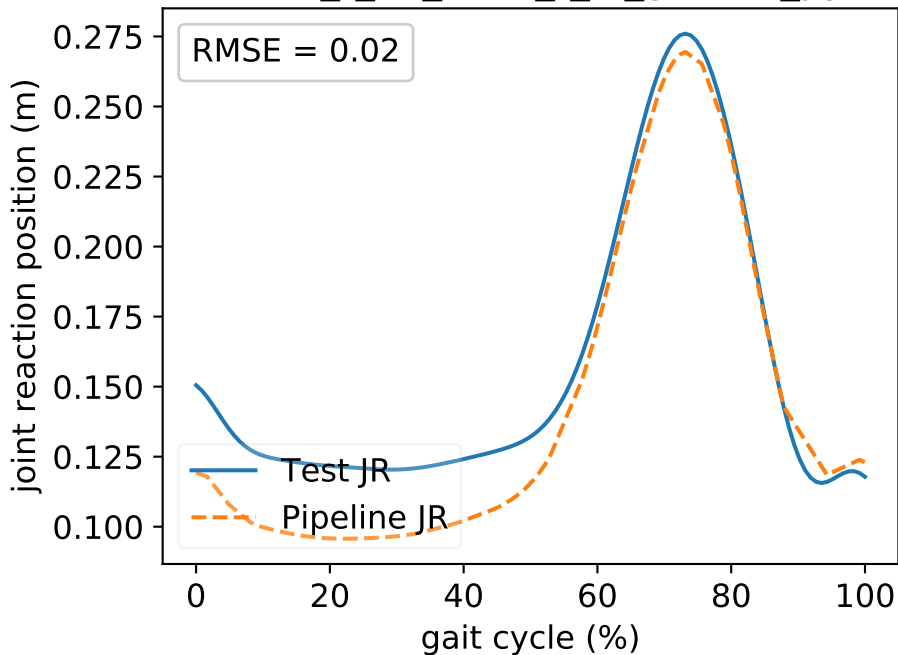
# ankle\_r\_on\_talus\_r\_in\_ground\_mz



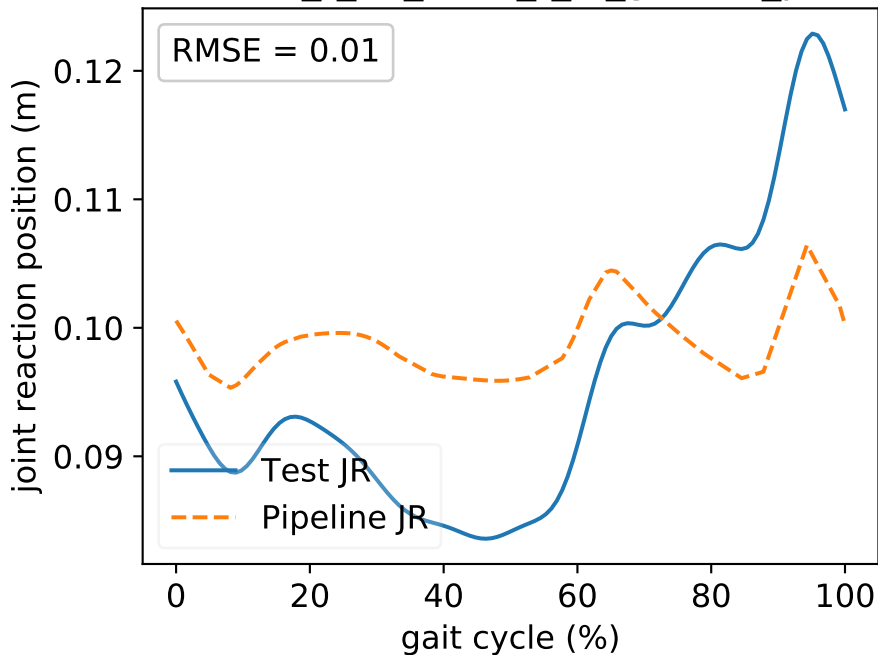
# ankle\_r\_on\_talus\_r\_in\_ground\_px



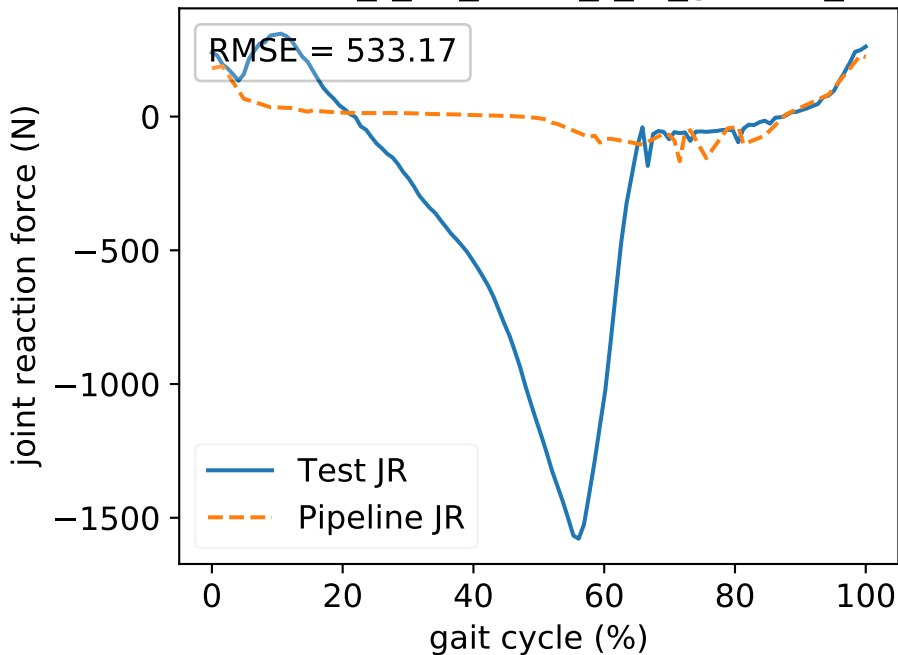
# ankle\_r\_on\_talus\_r\_in\_ground\_py



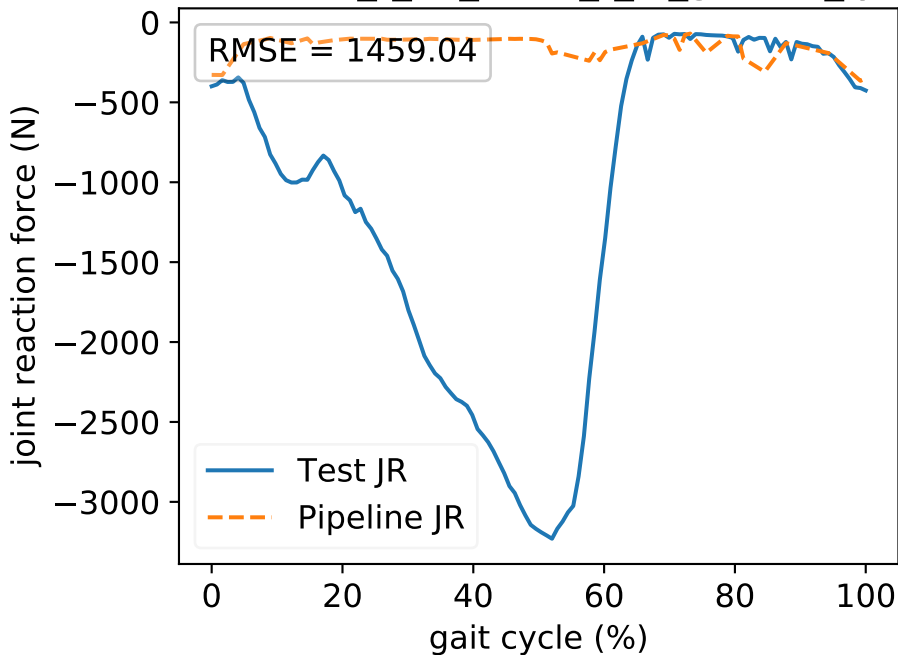
# ankle\_r\_on\_talus\_r\_in\_ground\_pz



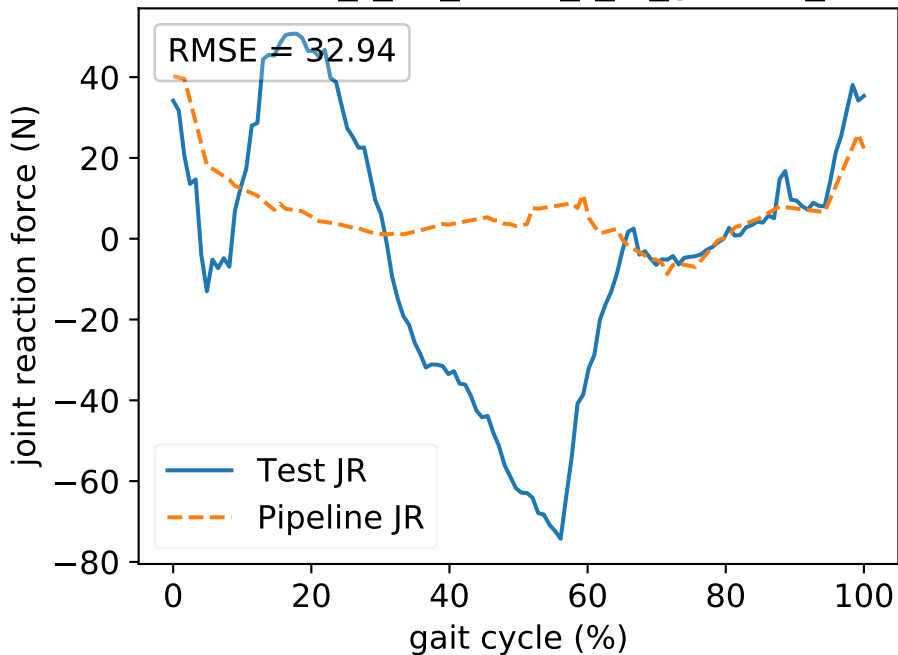
# subtalar\_r\_on\_calcn\_r\_in\_ground\_fx



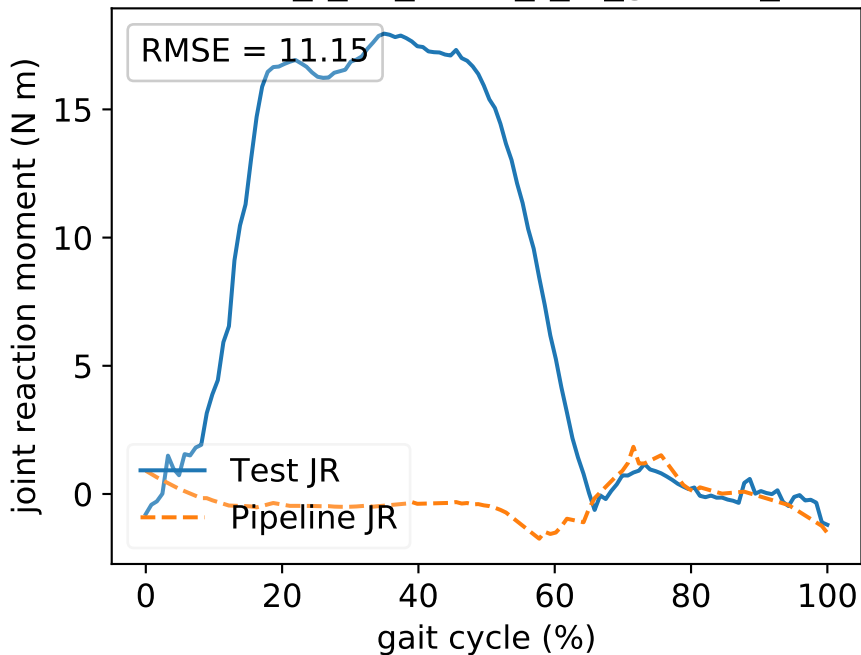
subtalar\_r\_on\_calcn\_r\_in\_ground\_fy



# subtalar\_r\_on\_calcn\_r\_in\_ground\_fz

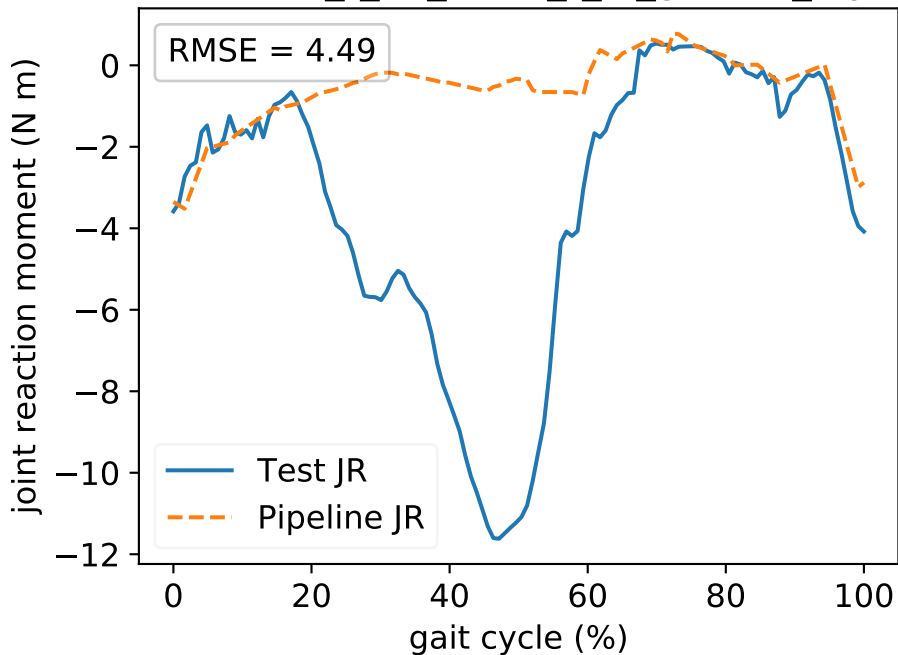


# subtalar\_r\_on\_calcn\_r\_in\_ground\_mx

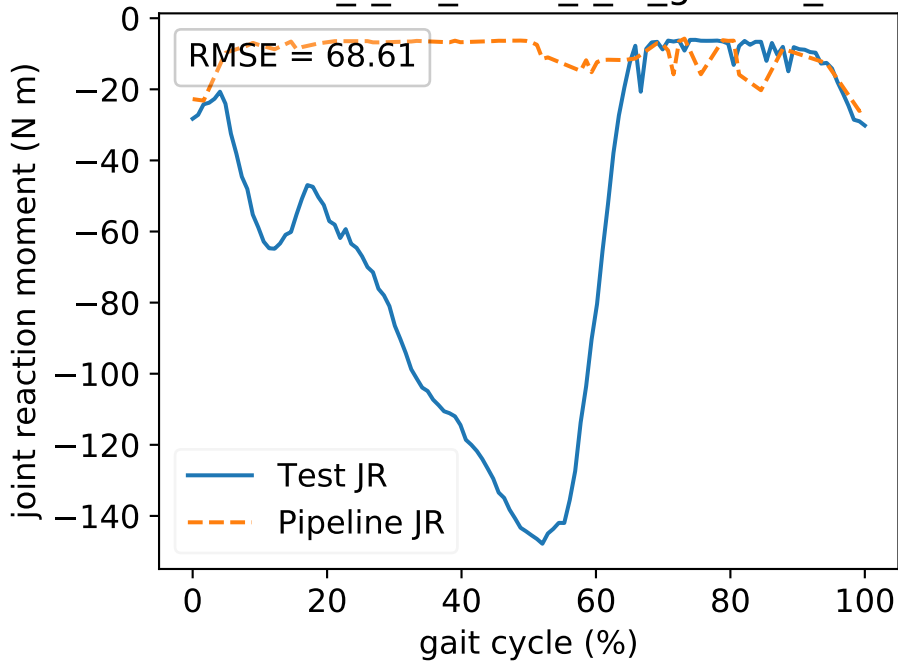




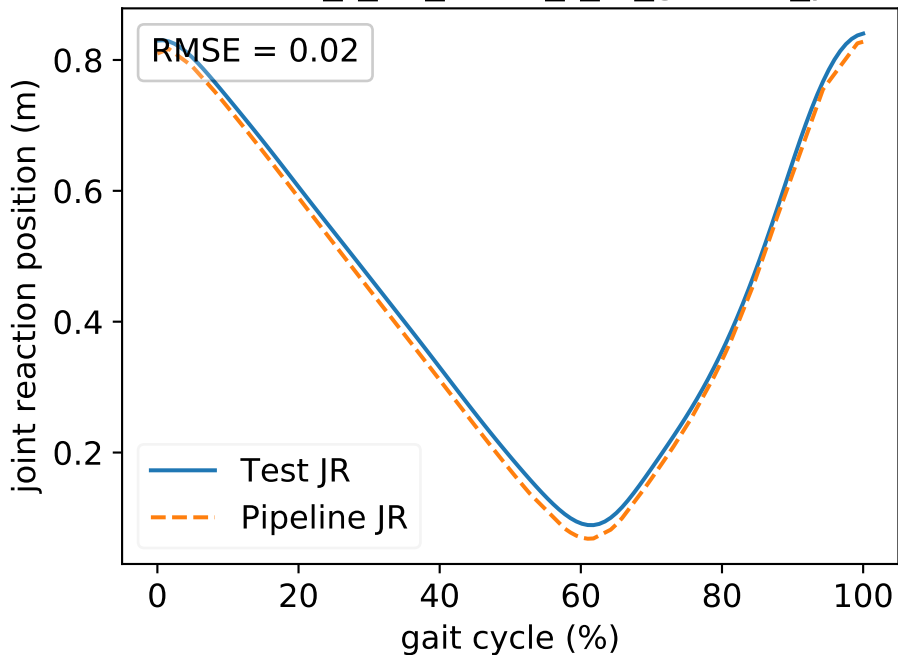
# subtalar\_r\_on\_calcn\_r\_in\_ground\_my



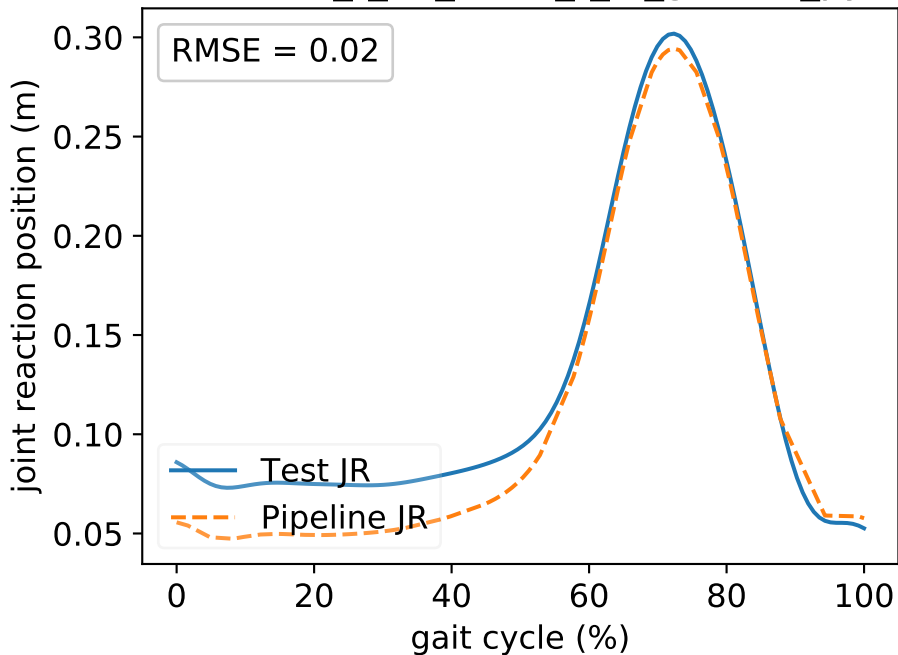
subtalar\_r\_on\_calcn\_r\_in\_ground\_mz



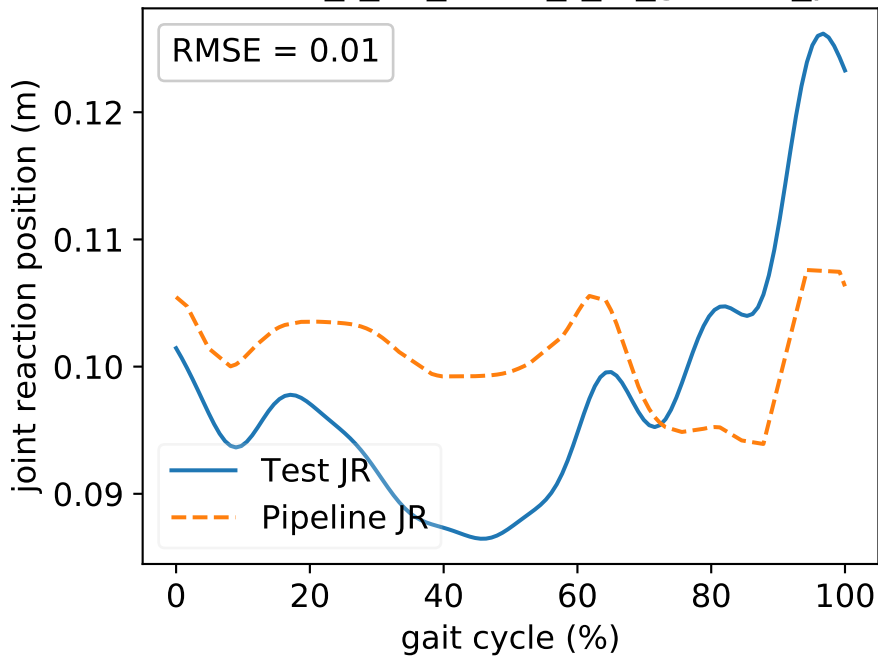
# subtalar\_r\_on\_calcn\_r\_in\_ground\_px



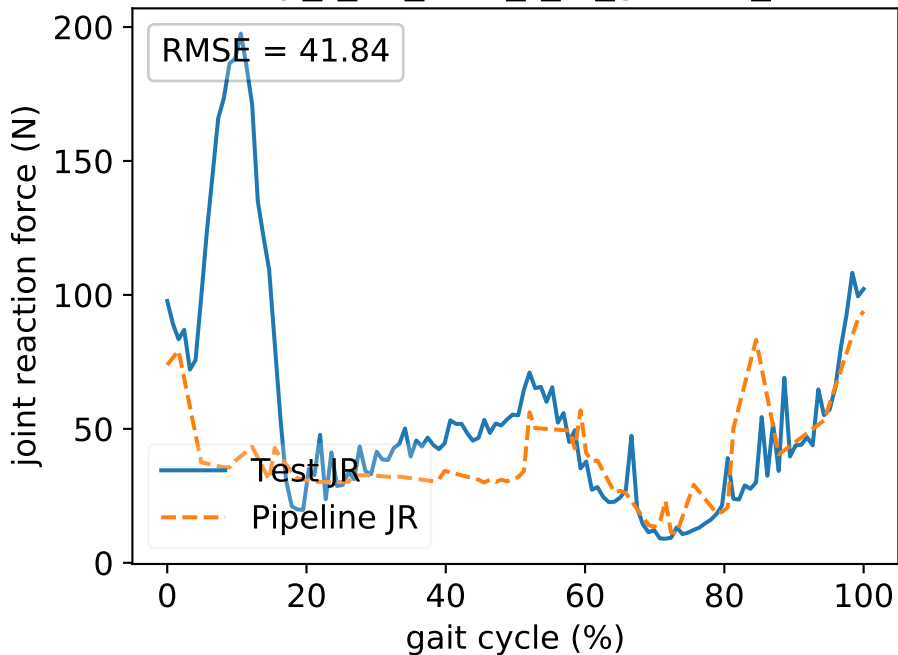
# subtalar\_r\_on\_calcn\_r\_in\_ground\_py



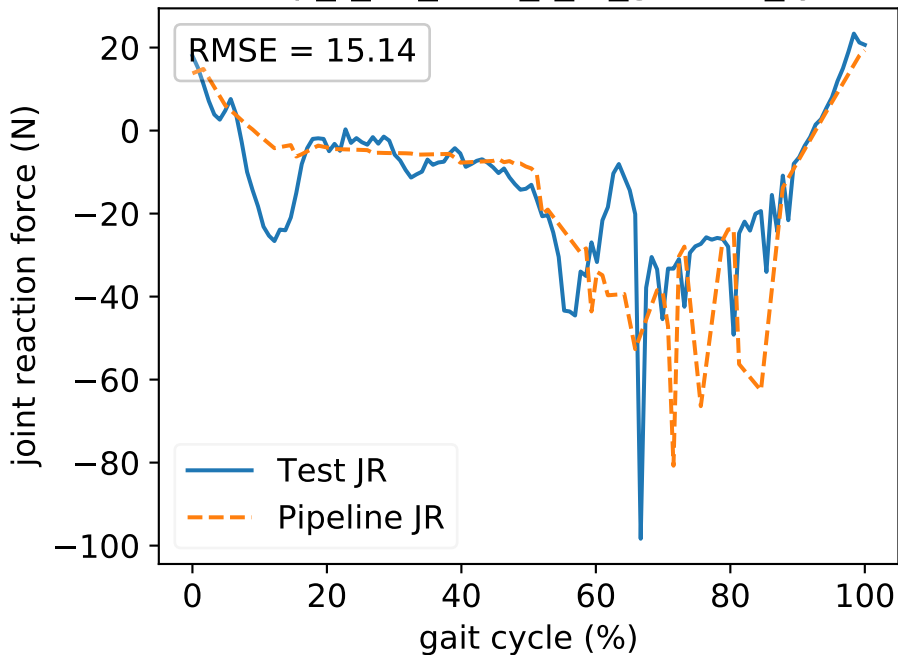
# subtalar\_r\_on\_calcn\_r\_in\_ground\_pz



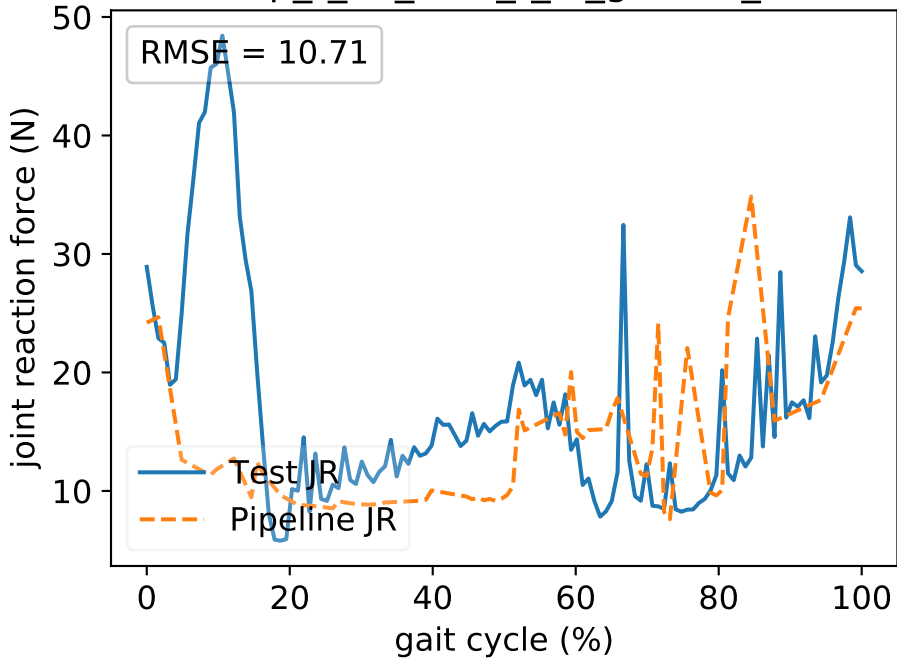
# mtp\_r\_on\_toes\_r\_in\_ground\_fx



# mtp\_r\_on\_toes\_r\_in\_ground\_fy



# mtp\_r\_on\_toes\_r\_in\_ground\_fz





# mtp\_r\_on\_toes\_r\_in\_ground\_mx

RMSE = 0.2

joint reaction moment (N m)

0.2

0.0

-0.2

-0.4

-0.6

Test JR

Pipeline JR

gait cycle (%)

0

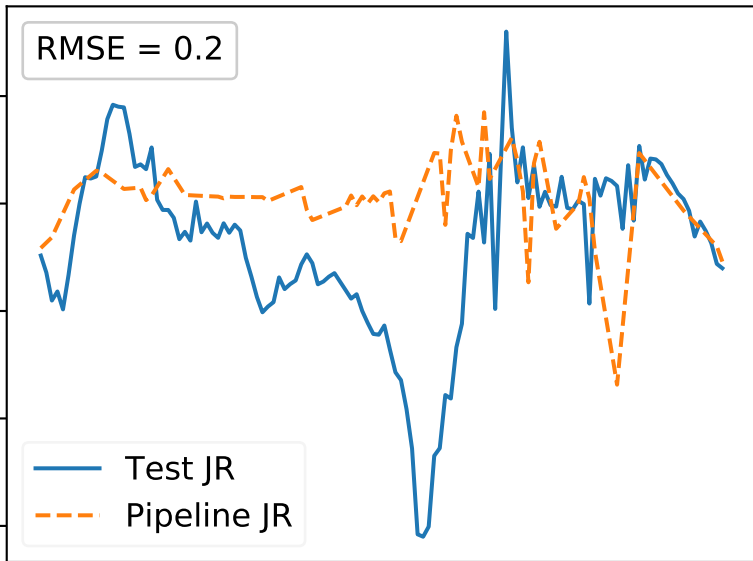
20

40

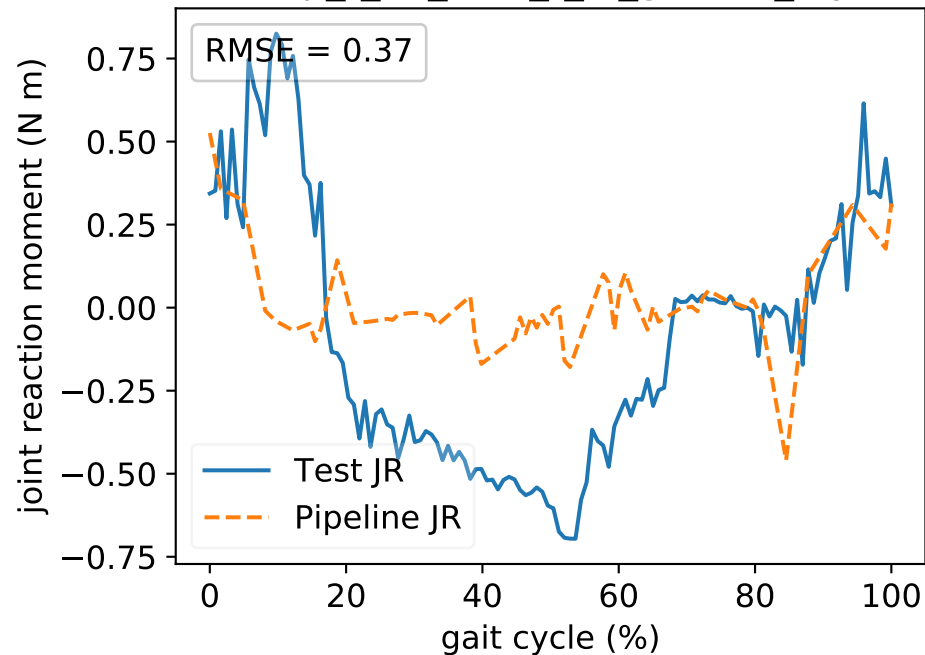
60

80

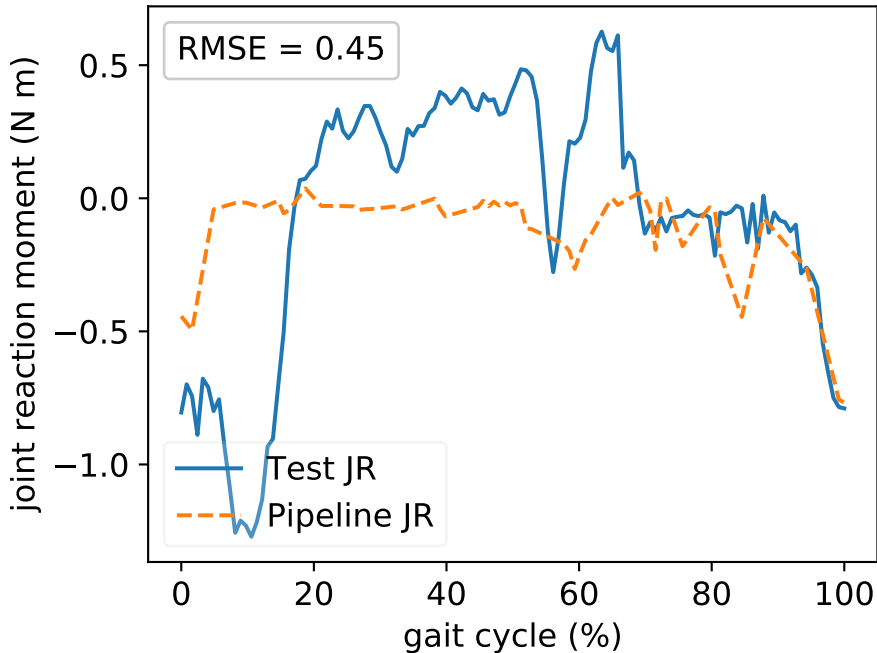
100



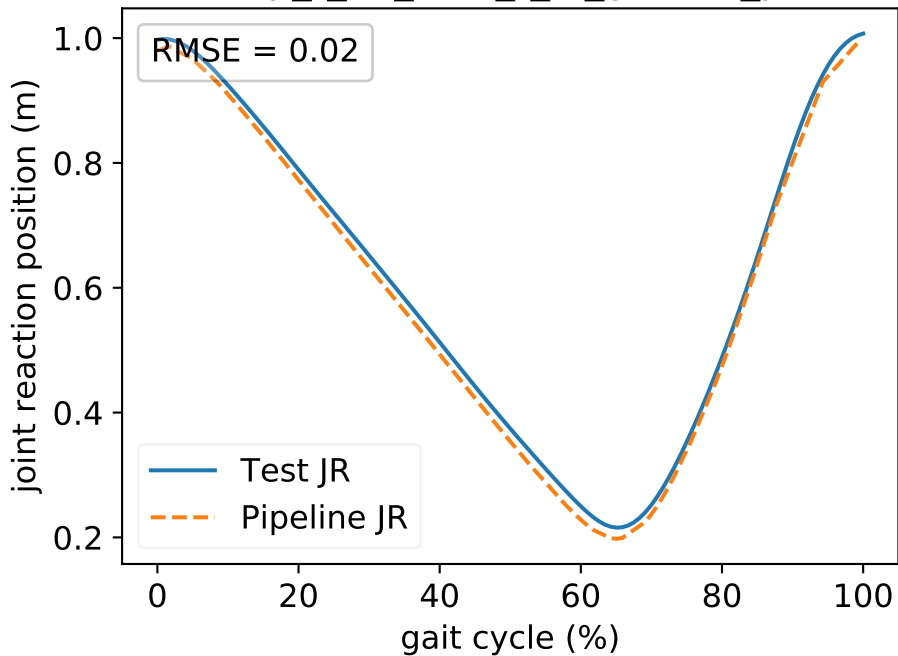
mtp\_r\_on\_toes\_r\_in\_ground\_my



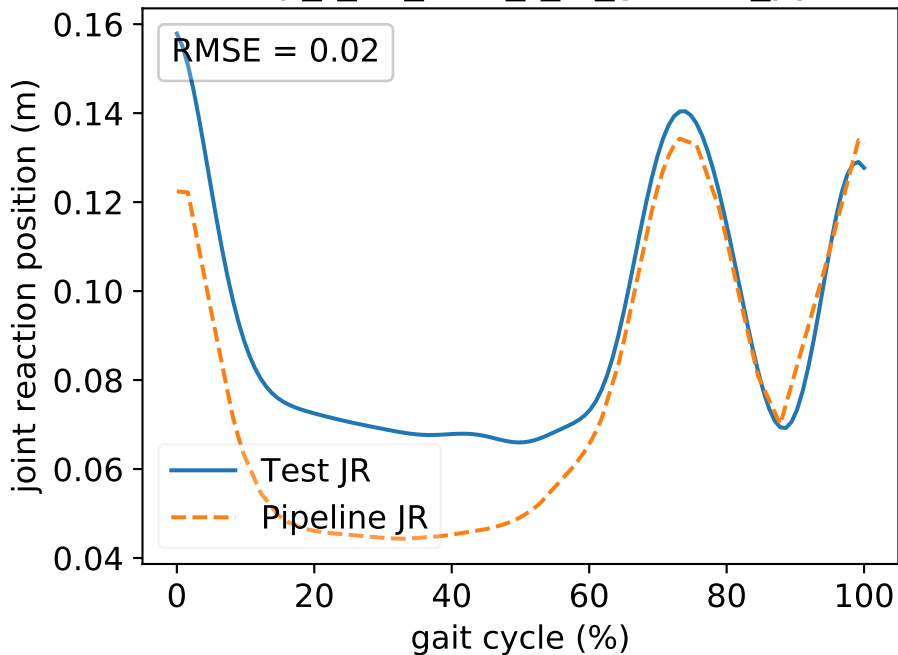
# mtp\_r\_on\_toes\_r\_in\_ground\_mz



# mtp\_r\_on\_toes\_r\_in\_ground\_px



# mtp\_r\_on\_toes\_r\_in\_ground\_py



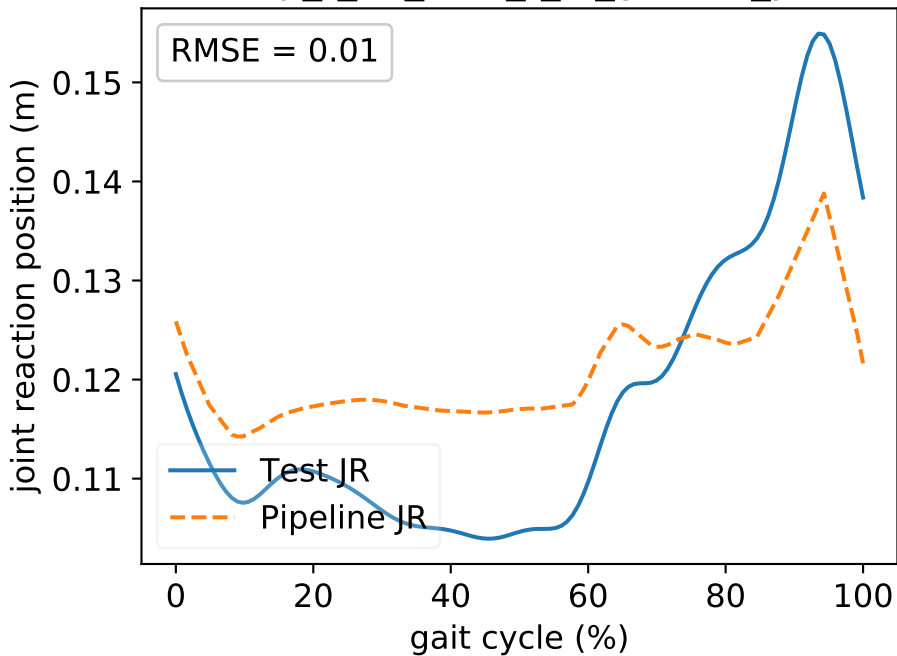
# mtp\_r\_on\_toes\_r\_in\_ground\_pz

RMSE = 0.01

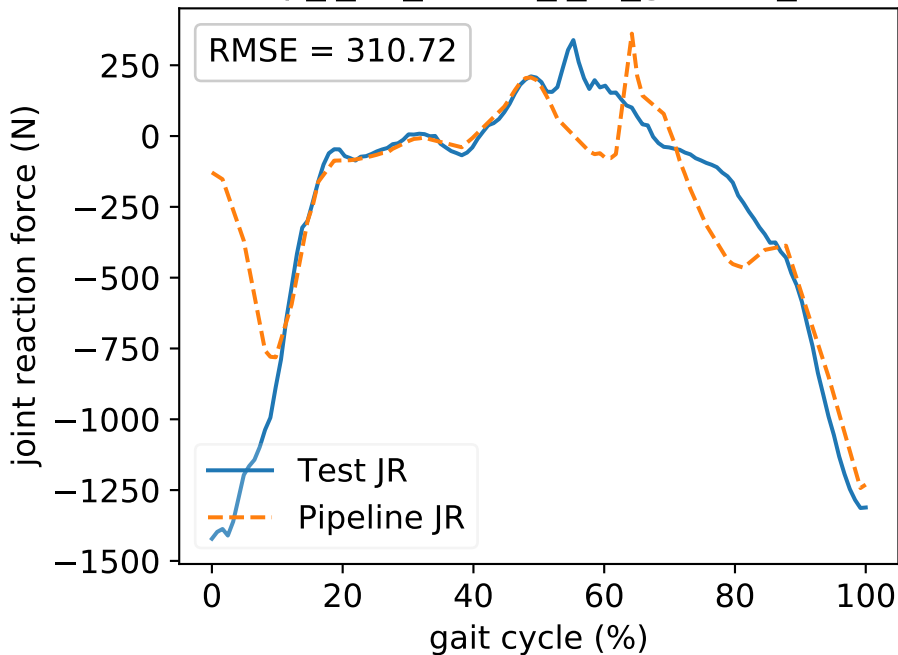
joint reaction position (m)

Test JR  
Pipeline JR

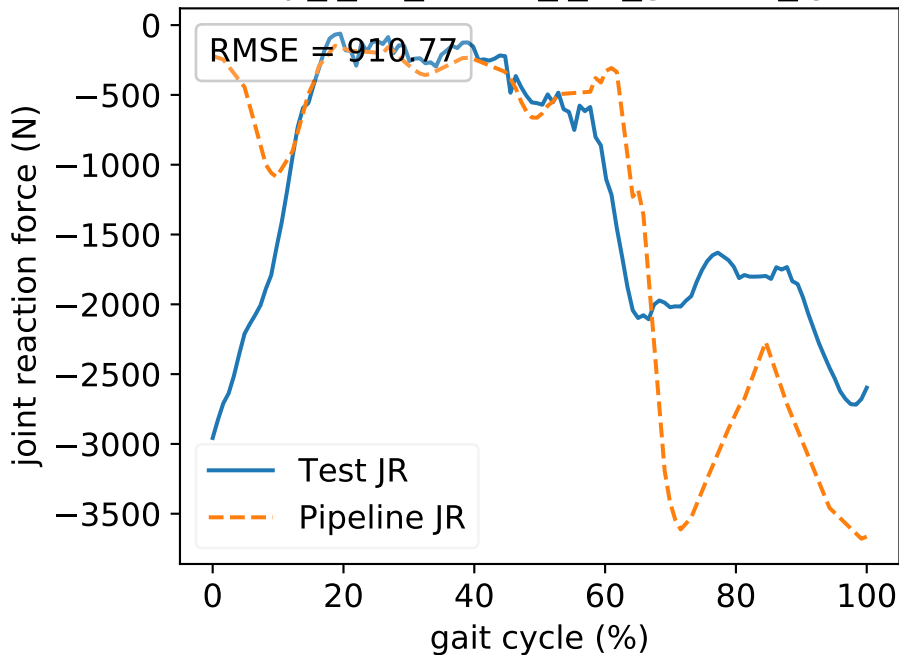
gait cycle (%)



# hip\_l\_on\_femur\_l\_in\_ground\_fx

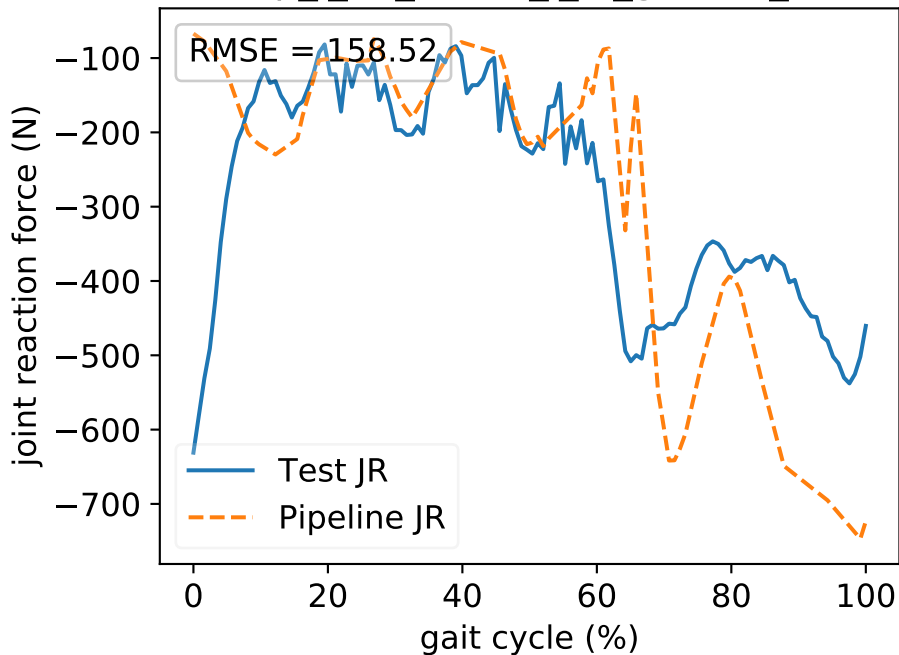


# hip\_l\_on\_femur\_l\_in\_ground\_fy

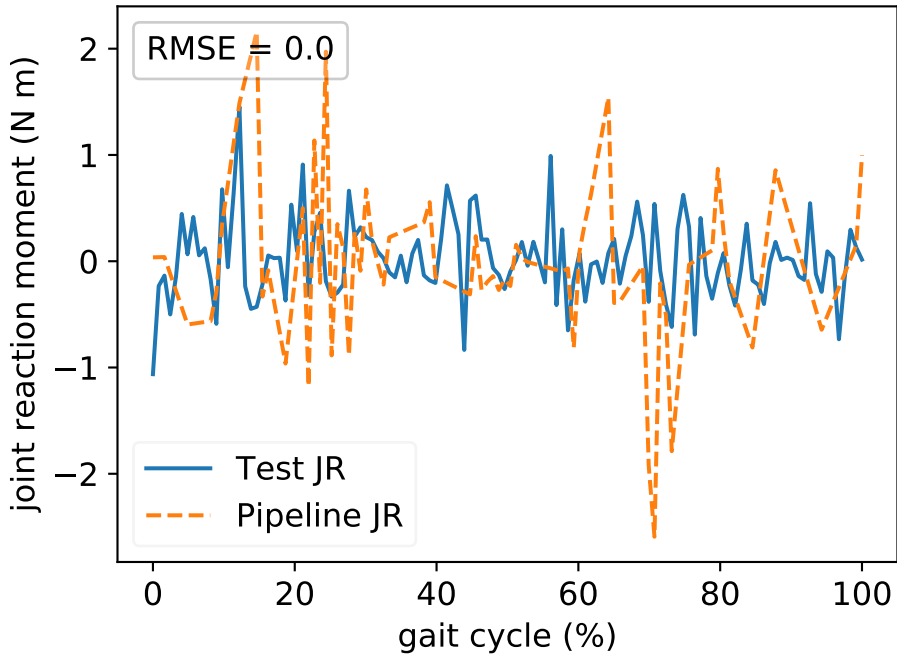


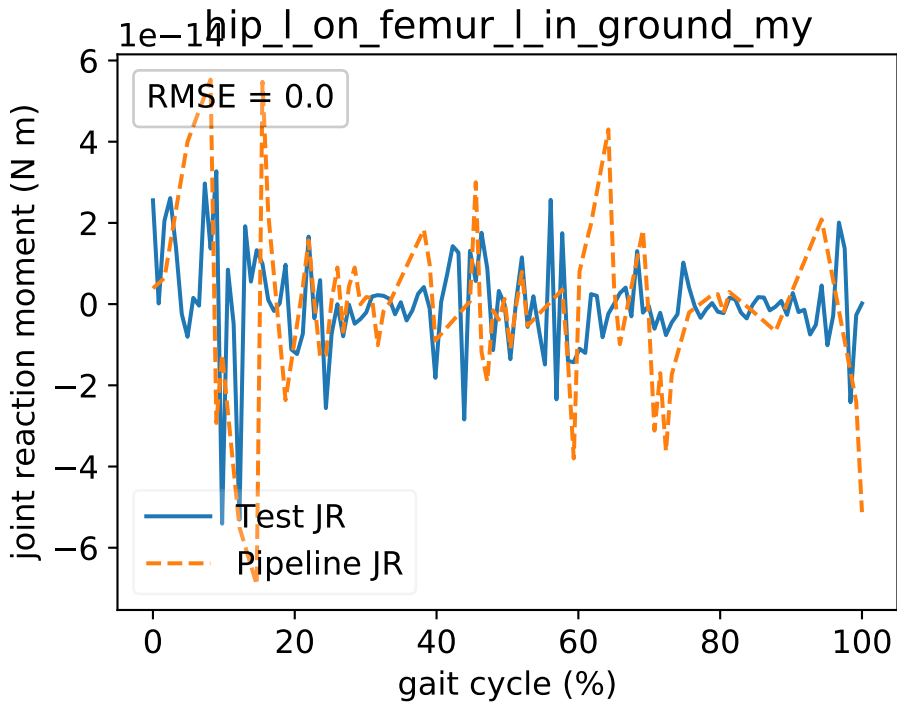


# hip\_l\_on\_femur\_l\_in\_ground\_fz



1e-13 hip\_l\_on\_femur\_l\_in\_ground\_mx





1e-15 hip\_l\_on\_femur\_l\_in\_ground\_mz

RMSE = 0.0

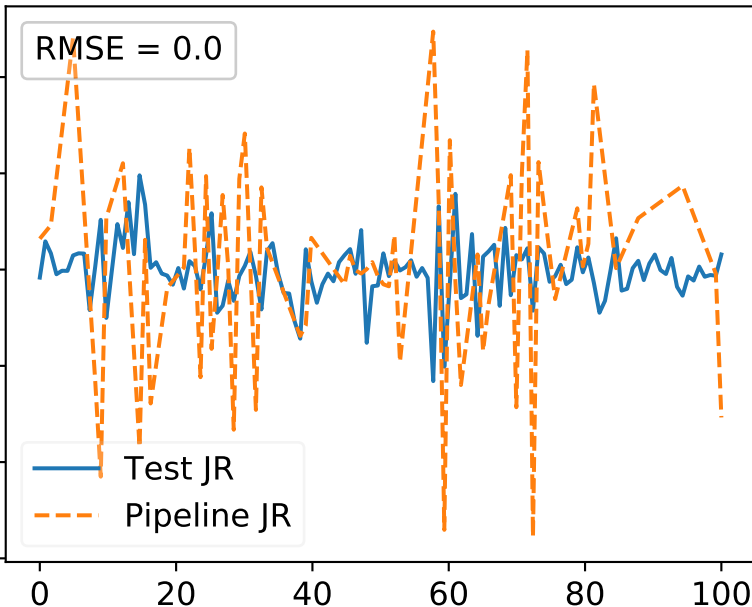
joint reaction moment (N m)

1.0  
0.5  
0.0  
-0.5  
-1.0  
-1.5

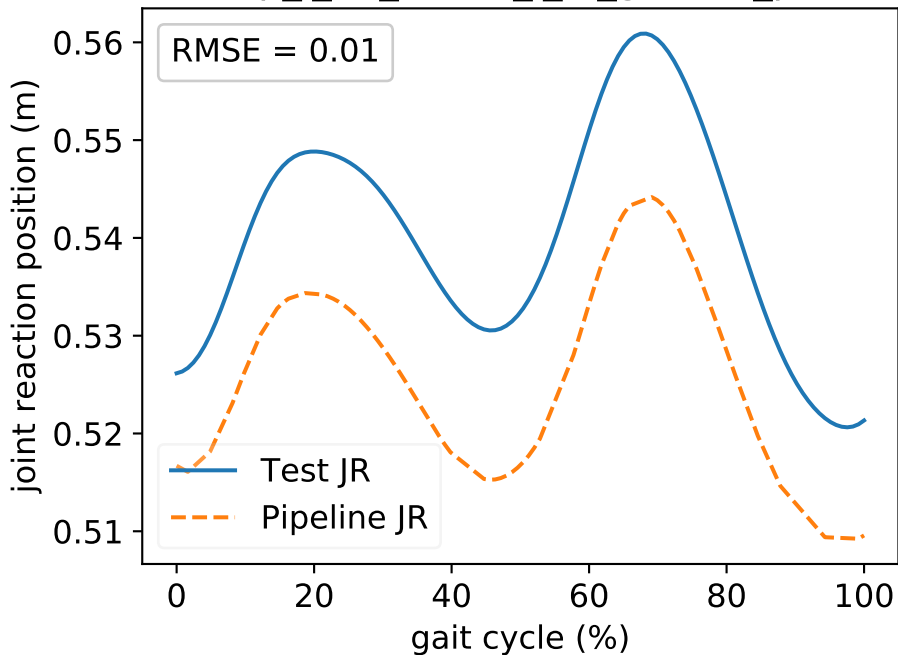
Test JR  
Pipeline JR

gait cycle (%)

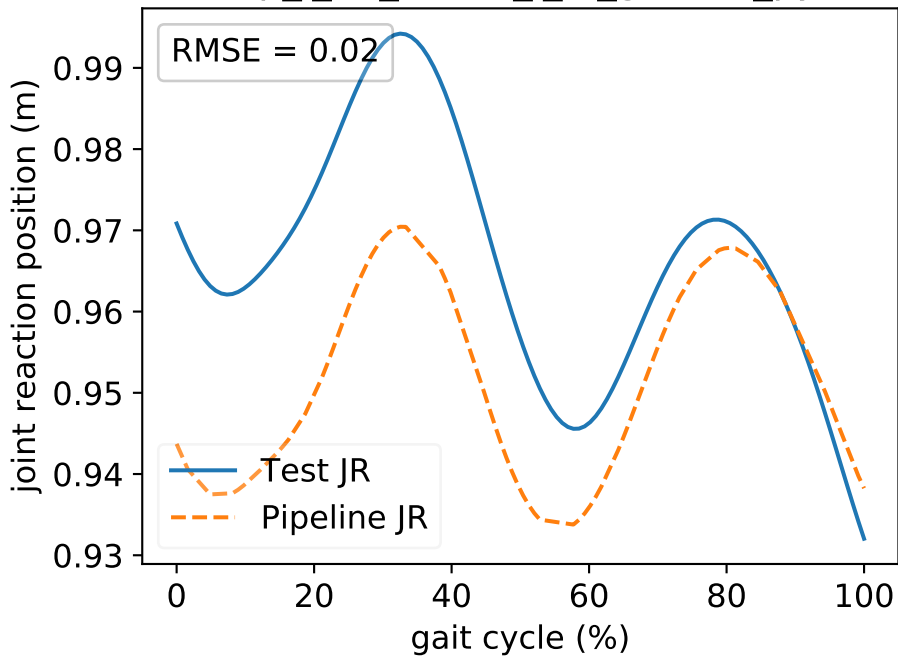
0 20 40 60 80 100



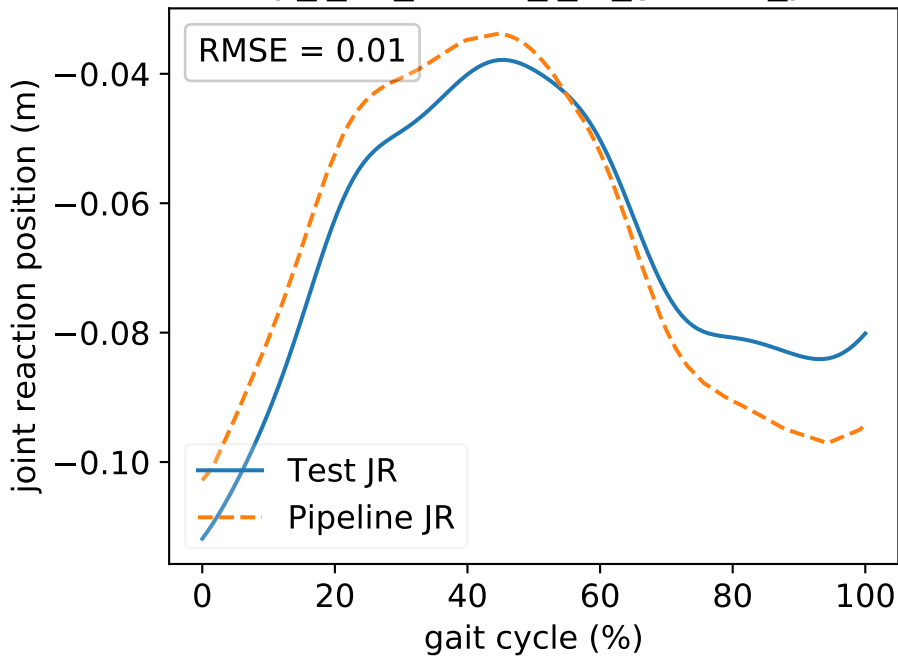
# hip\_l\_on\_femur\_l\_in\_ground\_px



# hip\_l\_on\_femur\_l\_in\_ground\_py



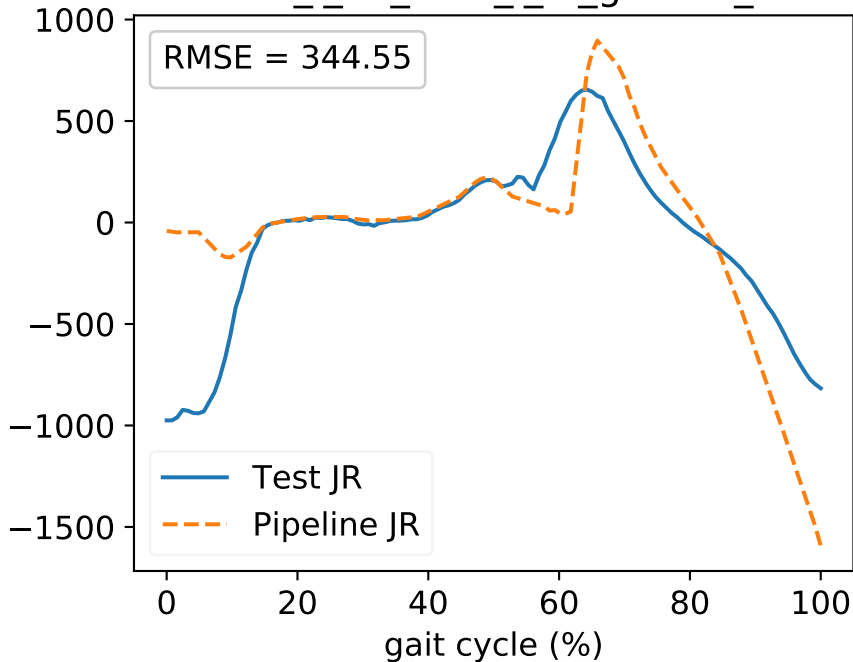
# hip\_l\_on\_femur\_l\_in\_ground\_pz



# knee\_l\_on\_tibia\_l\_in\_ground\_fx

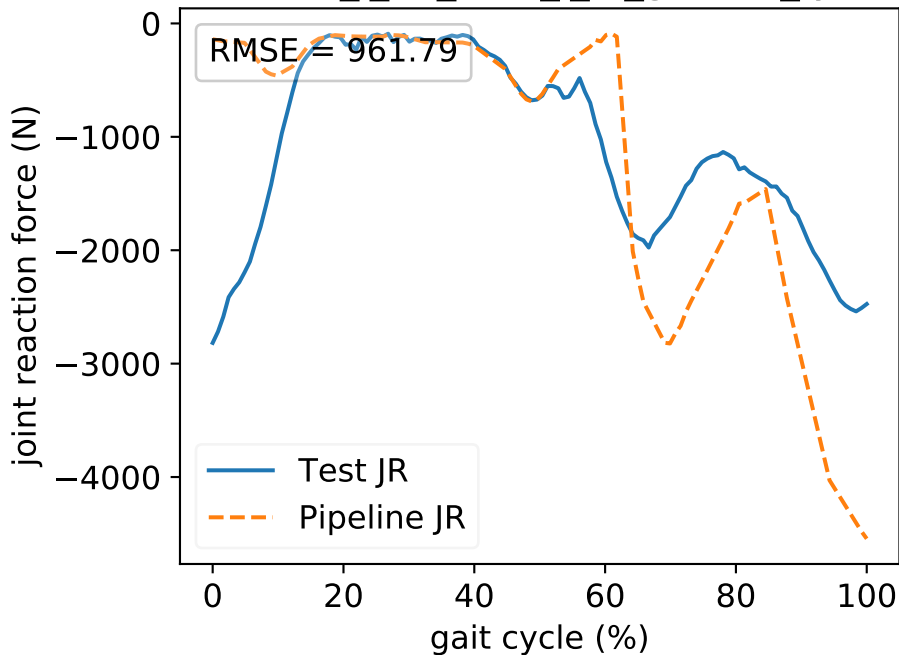
RMSE = 344.55

joint reaction force (N)

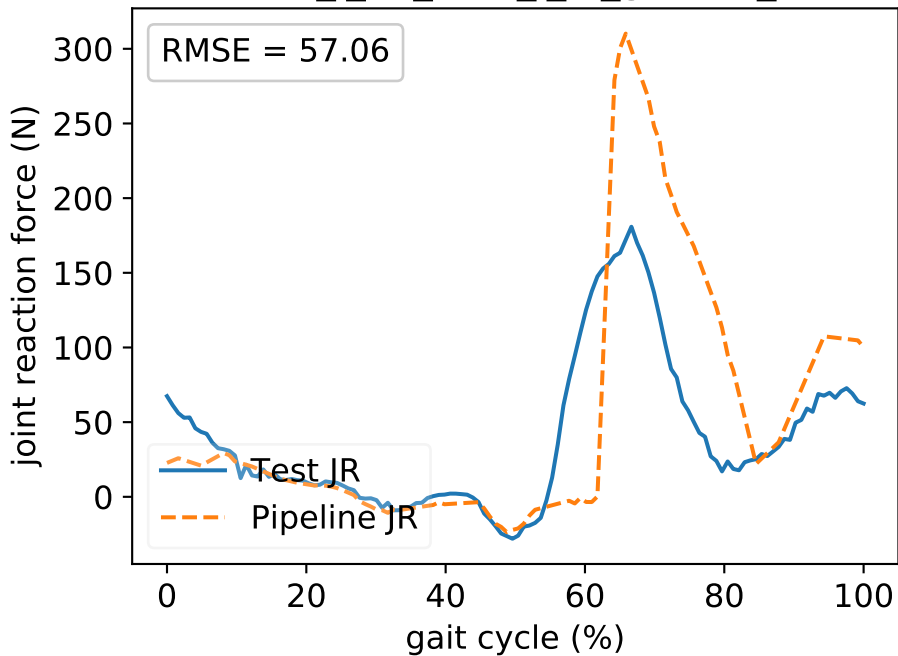




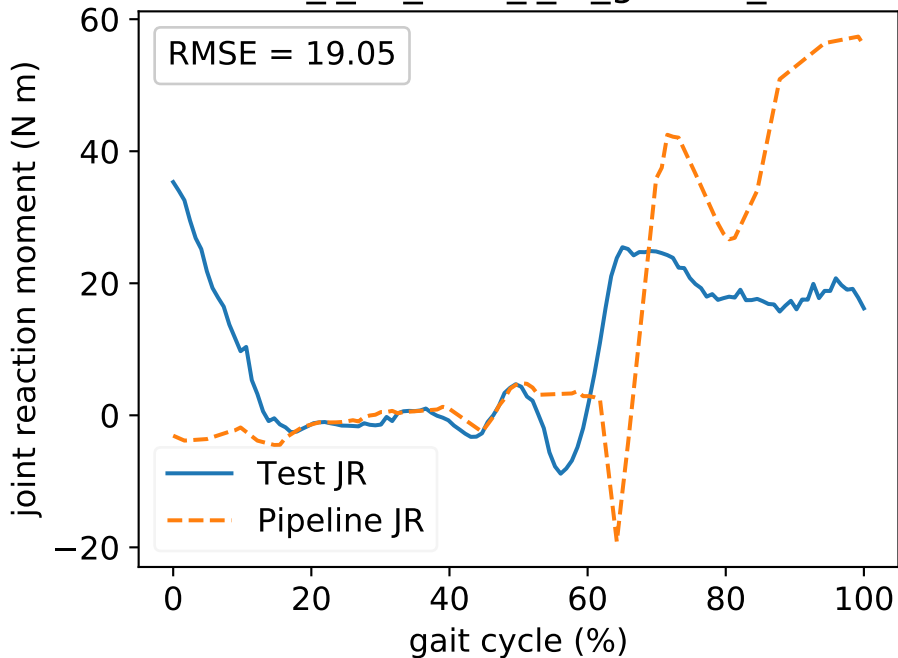
# knee\_l\_on\_tibia\_l\_in\_ground\_fy



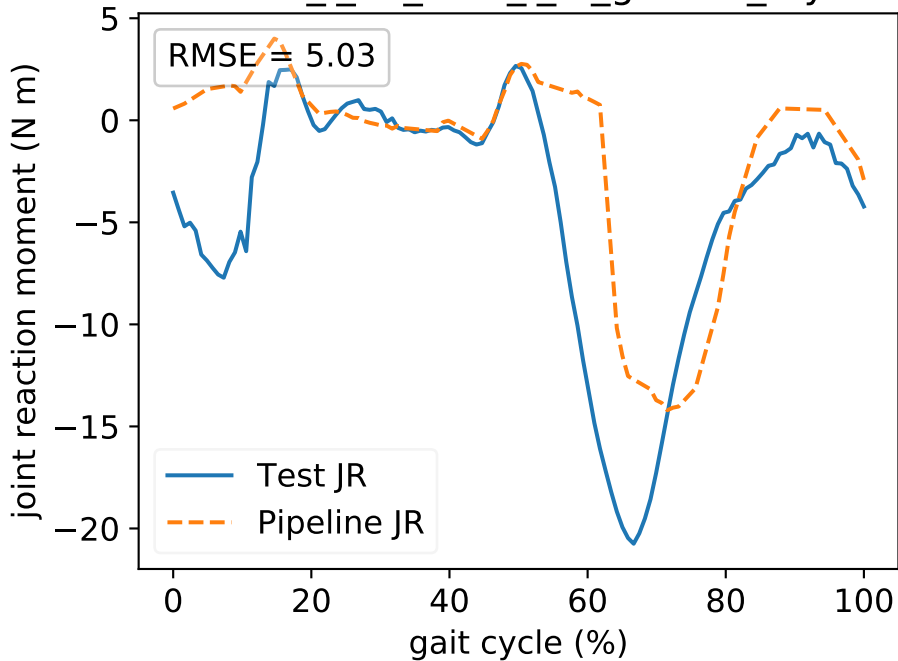
# knee\_l\_on\_tibia\_l\_in\_ground\_fz



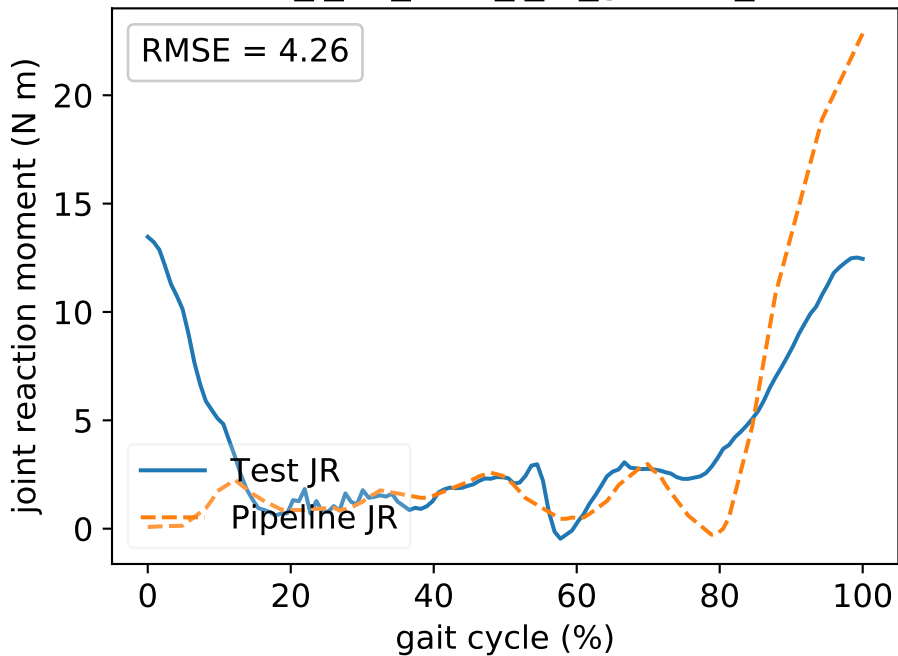
# knee\_l\_on\_tibia\_l\_in\_ground\_mx



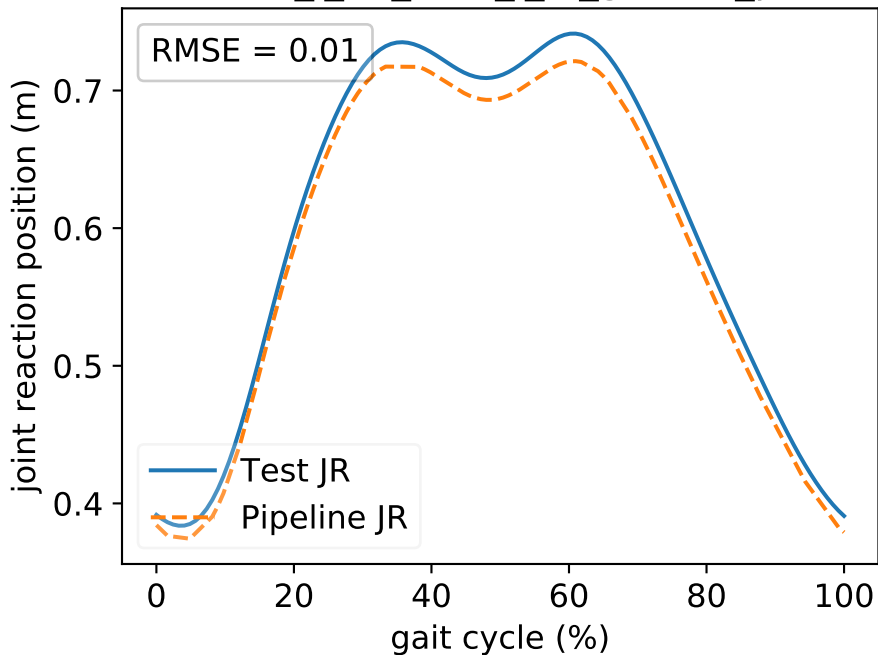
# knee\_l\_on\_tibia\_l\_in\_ground\_my



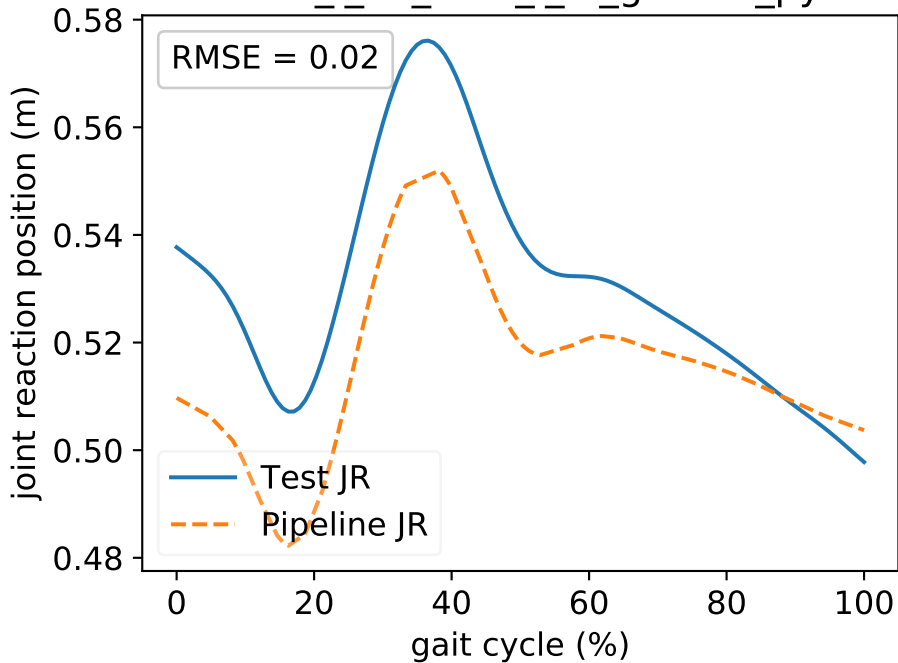
# knee\_l\_on\_tibia\_l\_in\_ground\_mz



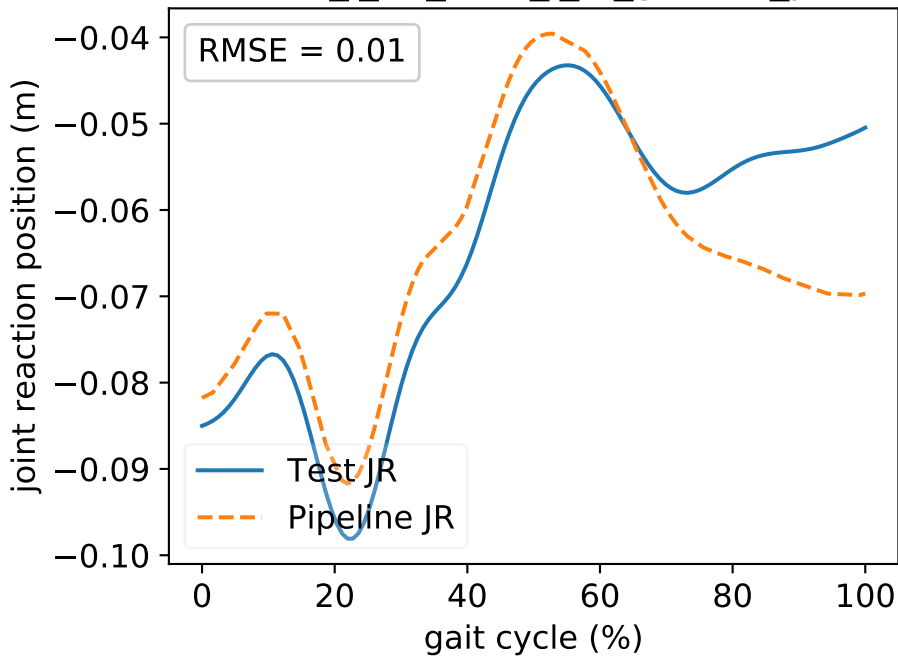
# knee\_l\_on\_tibia\_l\_in\_ground\_px



# knee\_l\_on\_tibia\_l\_in\_ground\_py

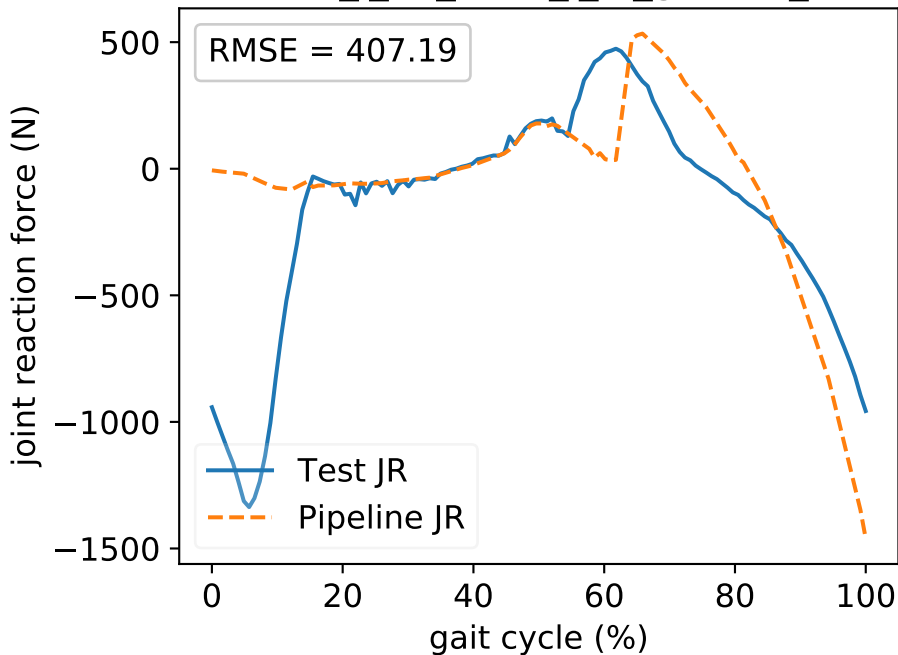


# knee\_l\_on\_tibia\_l\_in\_ground\_pz

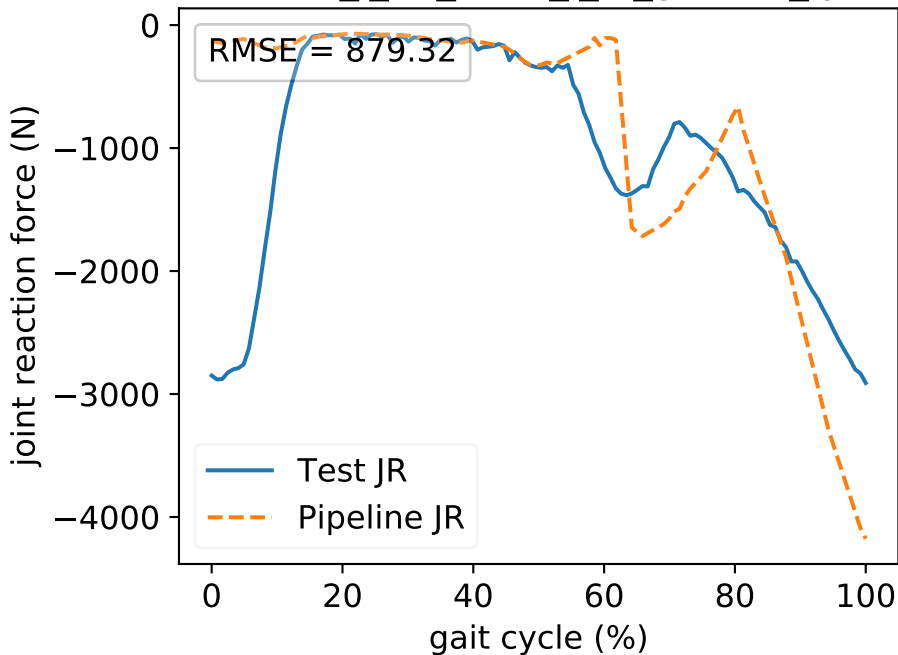




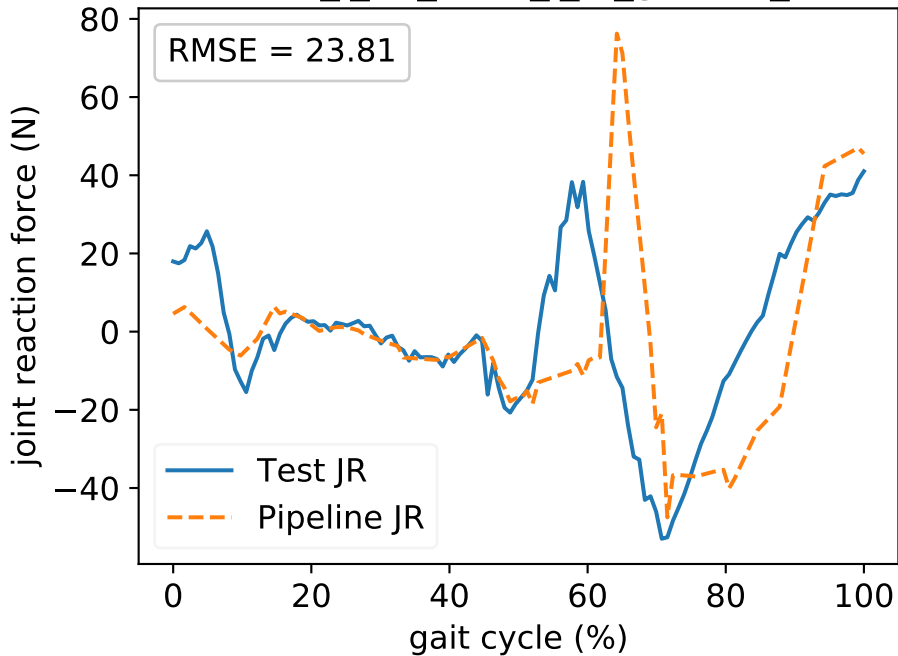
# ankle\_l\_on\_talus\_l\_in\_ground\_fx



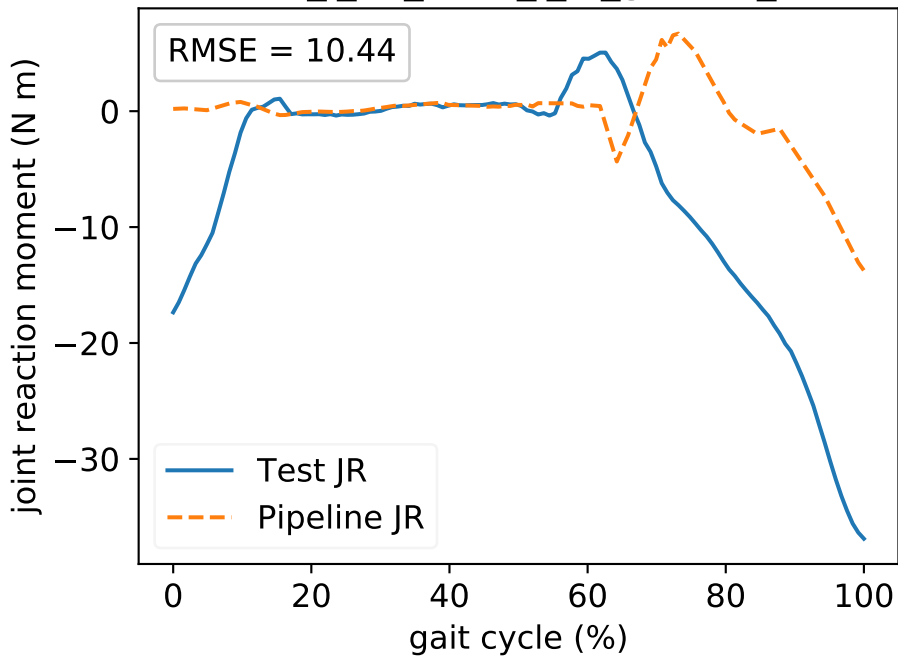
# ankle\_l\_on\_talus\_l\_in\_ground\_fy



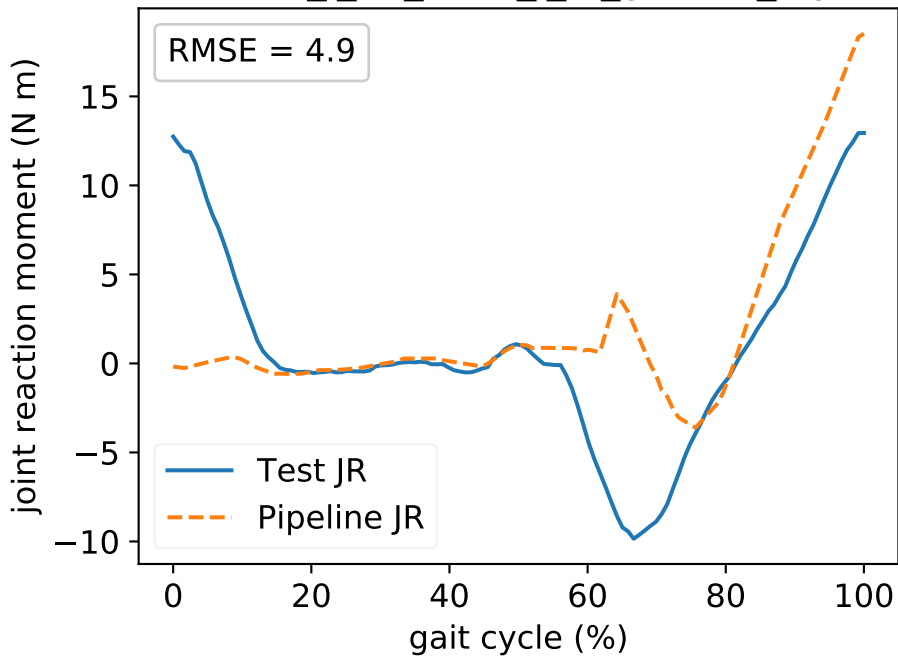
# ankle\_l\_on\_talus\_l\_in\_ground\_fz



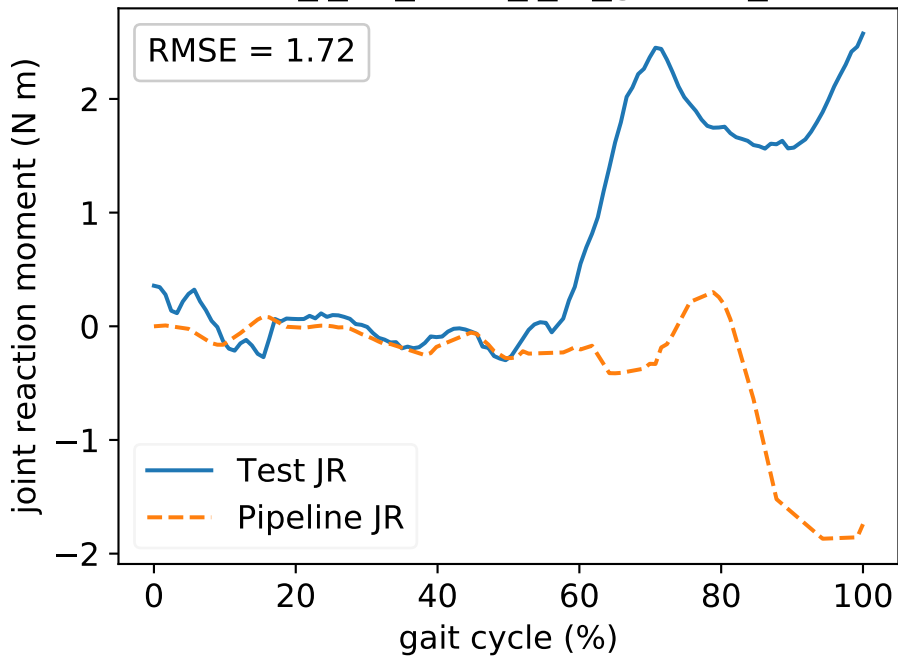
# ankle\_l\_on\_talus\_l\_in\_ground\_mx



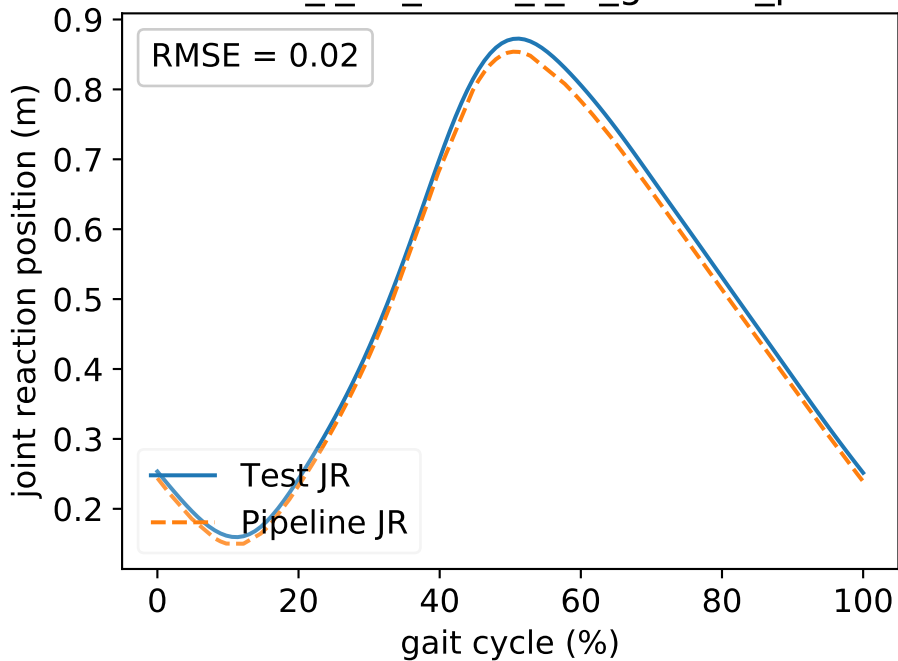
# ankle\_l\_on\_talus\_l\_in\_ground\_my



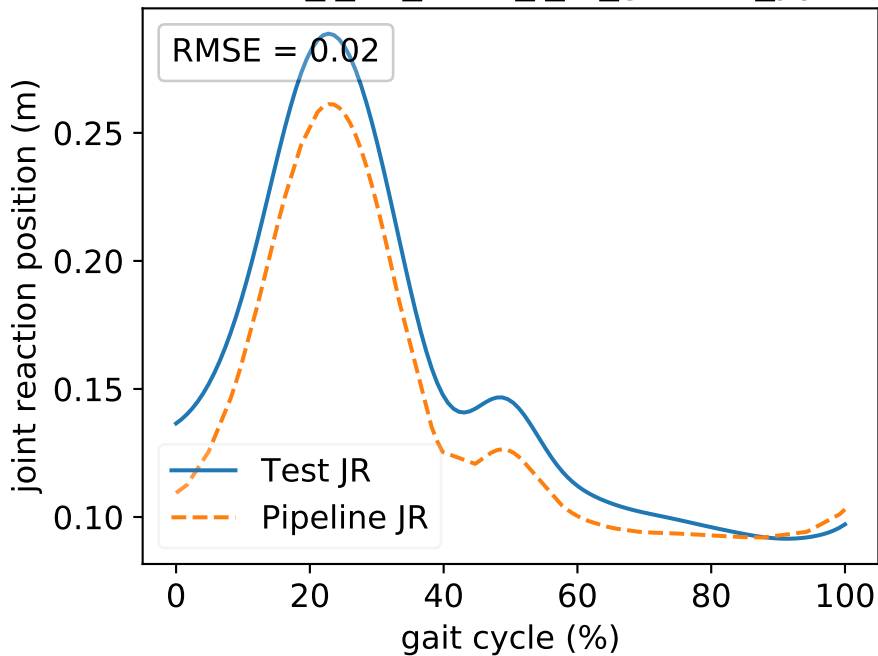
# ankle\_l\_on\_talus\_l\_in\_ground\_mz



# ankle\_l\_on\_talus\_l\_in\_ground\_px



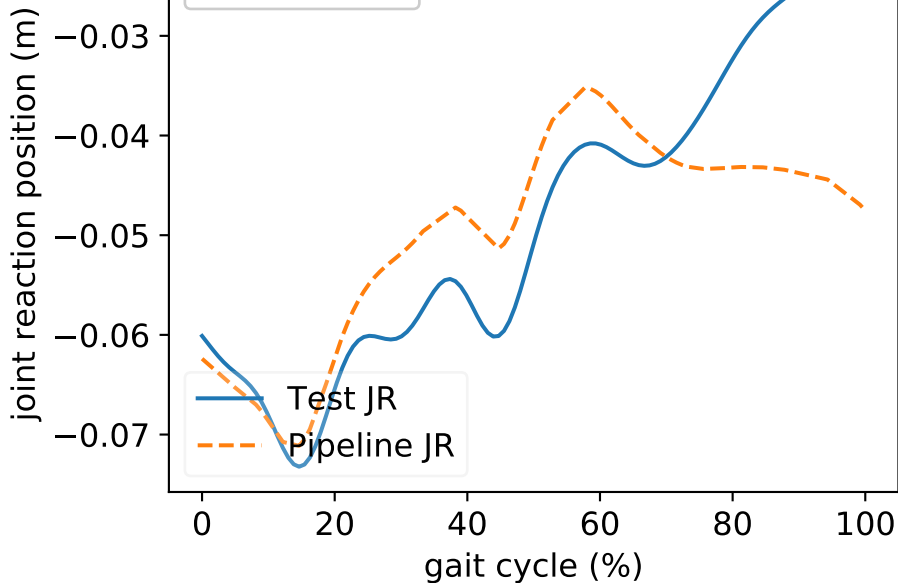
# ankle\_l\_on\_talus\_l\_in\_ground\_py



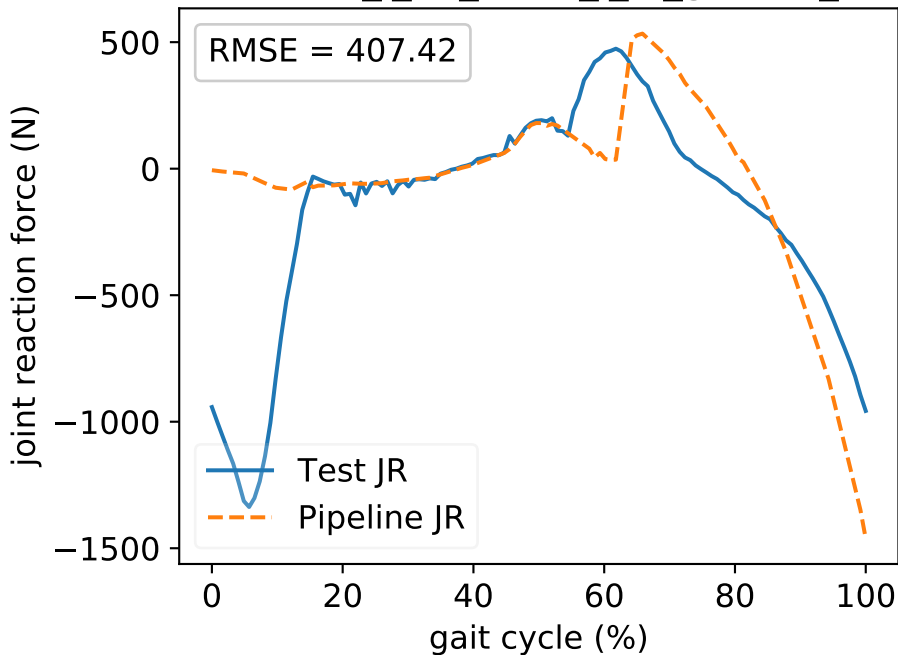


# ankle\_l\_on\_talus\_l\_in\_ground\_pz

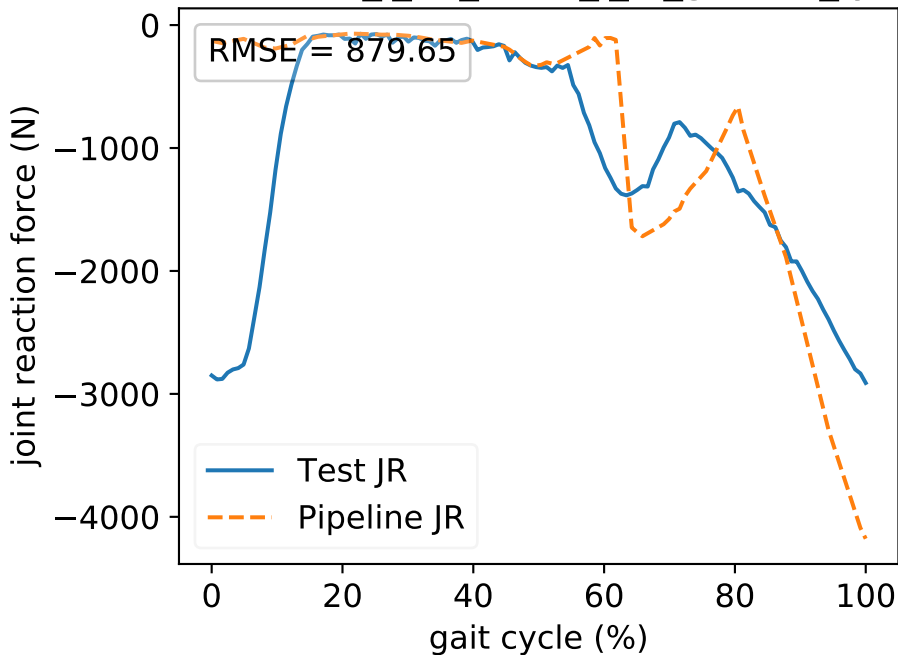
RMSE = 0.01



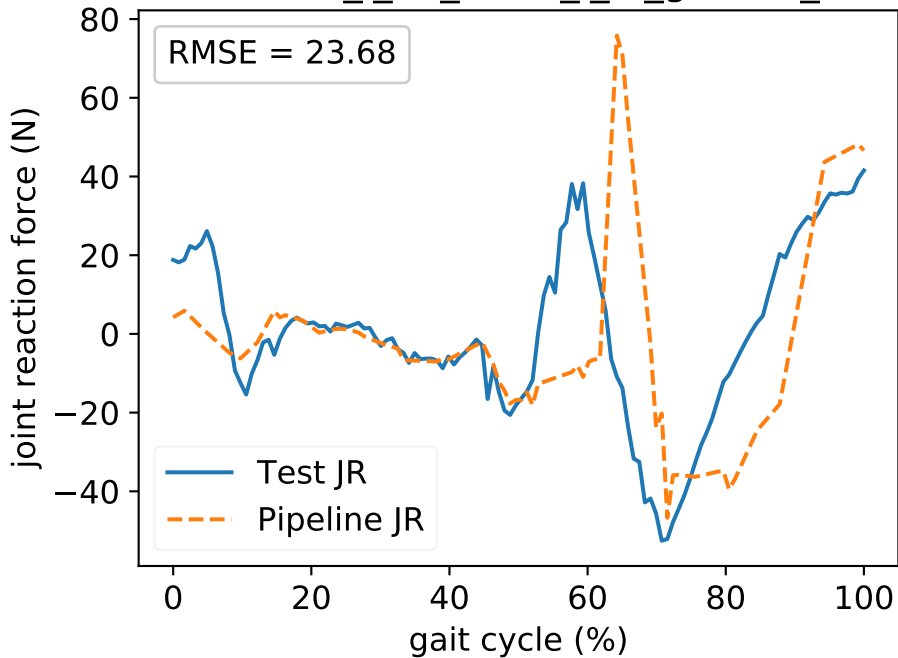
# subtalar\_l\_on\_calcn\_l\_in\_ground\_fx



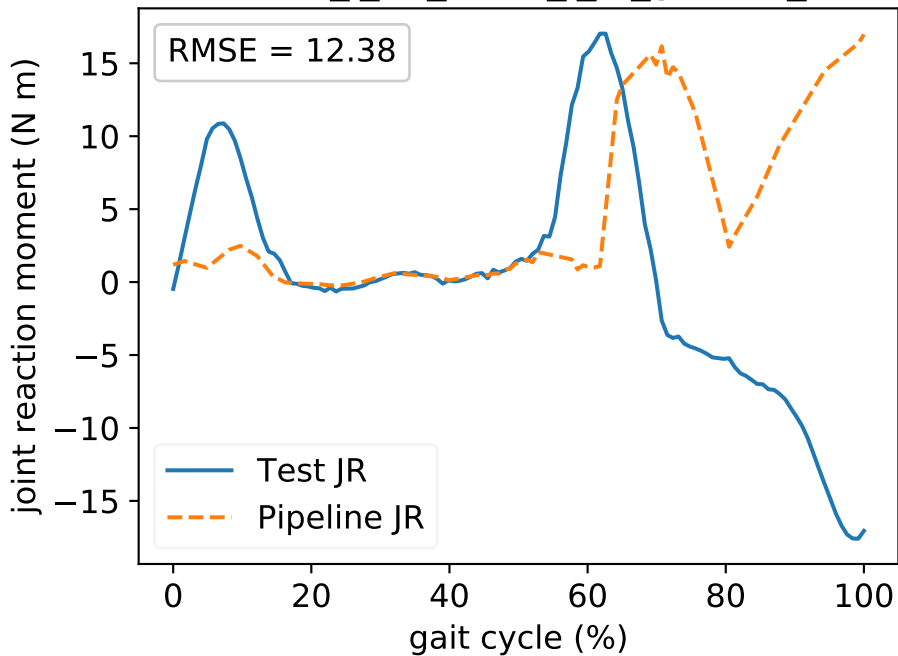
# subtalar\_l\_on\_calcn\_l\_in\_ground\_fy



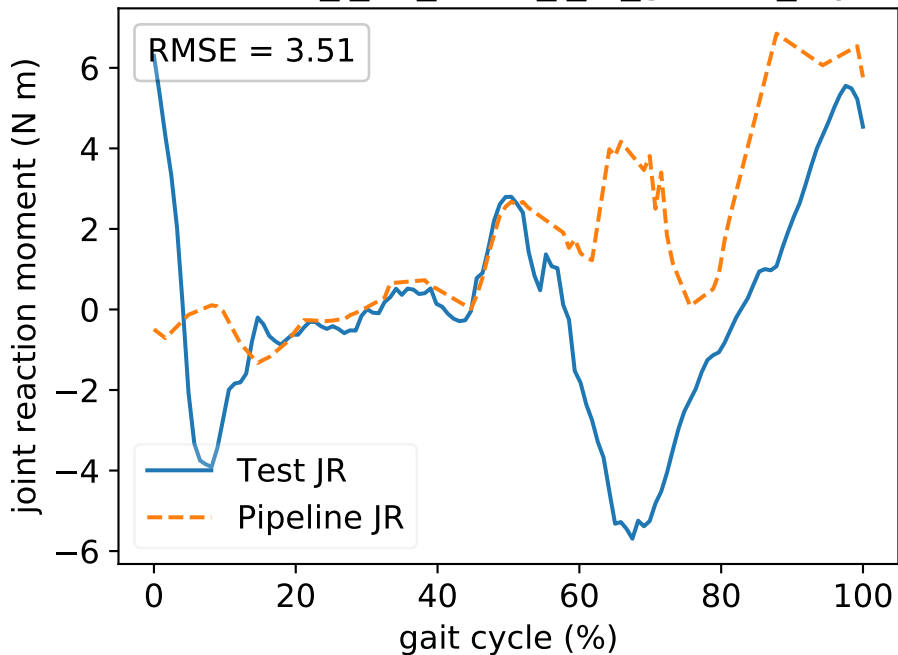
# subtalar\_l\_on\_calcn\_l\_in\_ground\_fz



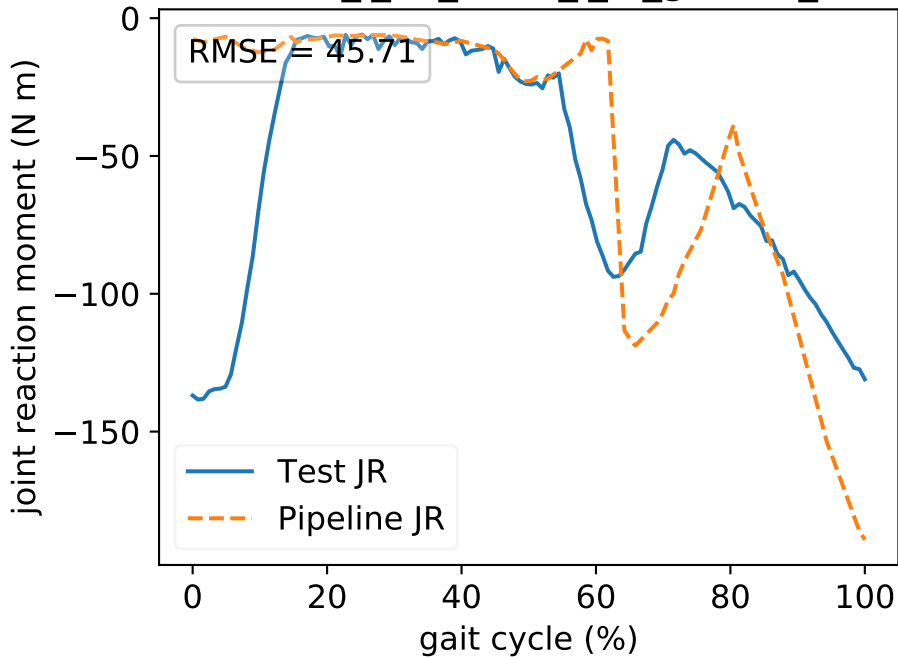
# subtalar\_l\_on\_calcn\_l\_in\_ground\_mx



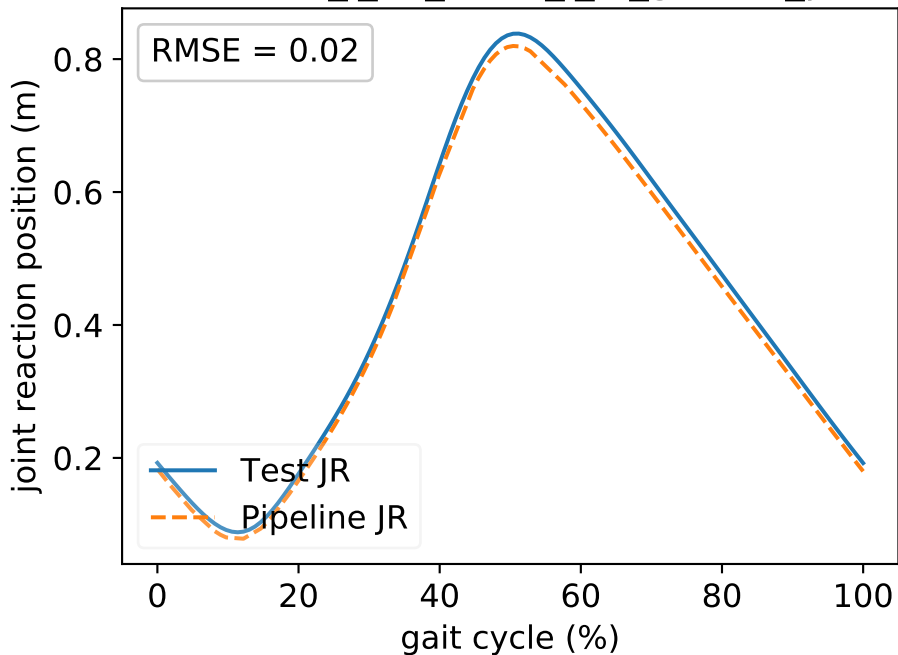
# subtalar\_l\_on\_calcn\_l\_in\_ground\_my



subtalar\_l\_on\_calcn\_l\_in\_ground\_mz

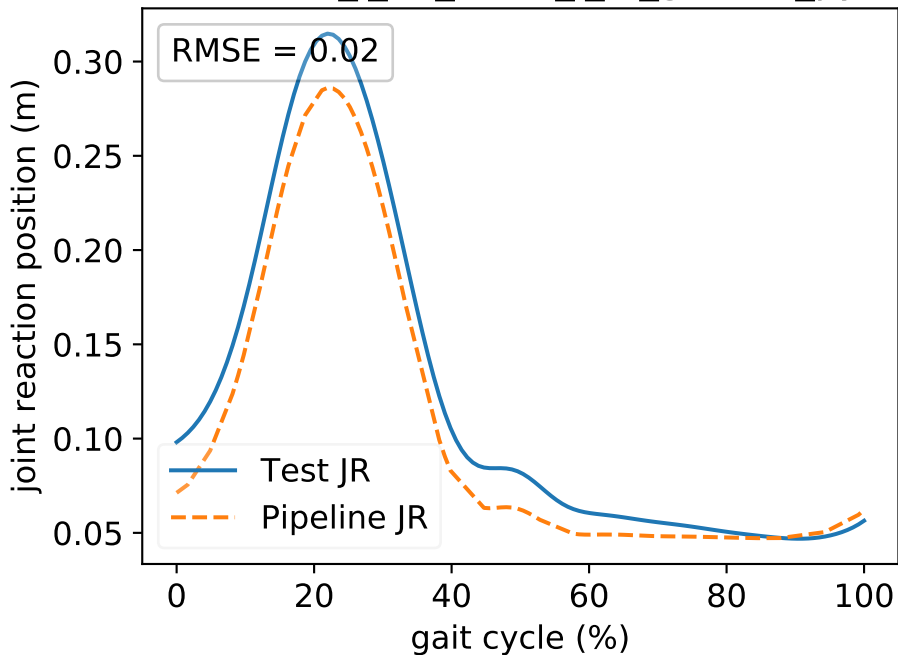


# subtalar\_l\_on\_calcn\_l\_in\_ground\_px

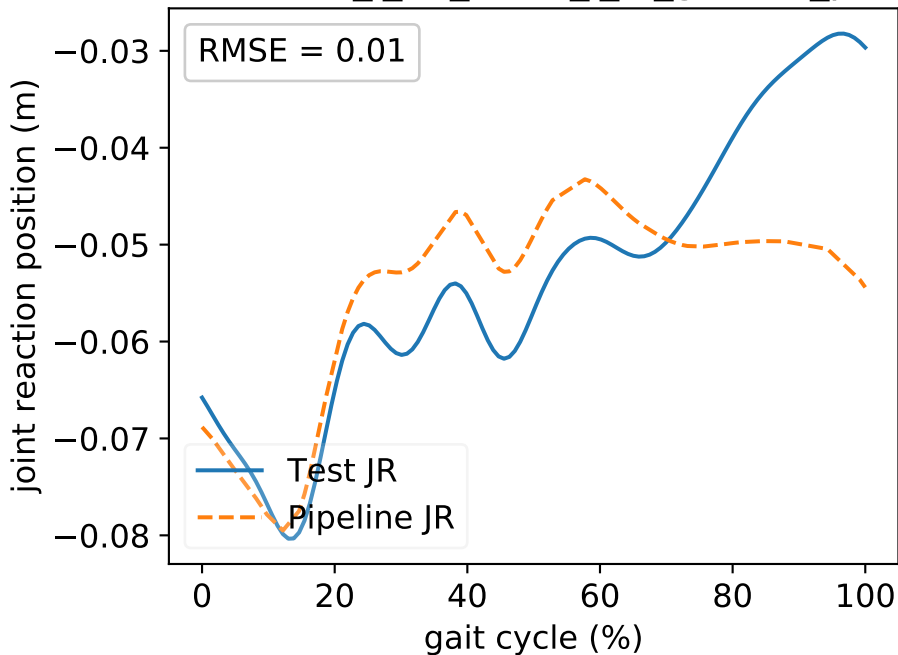




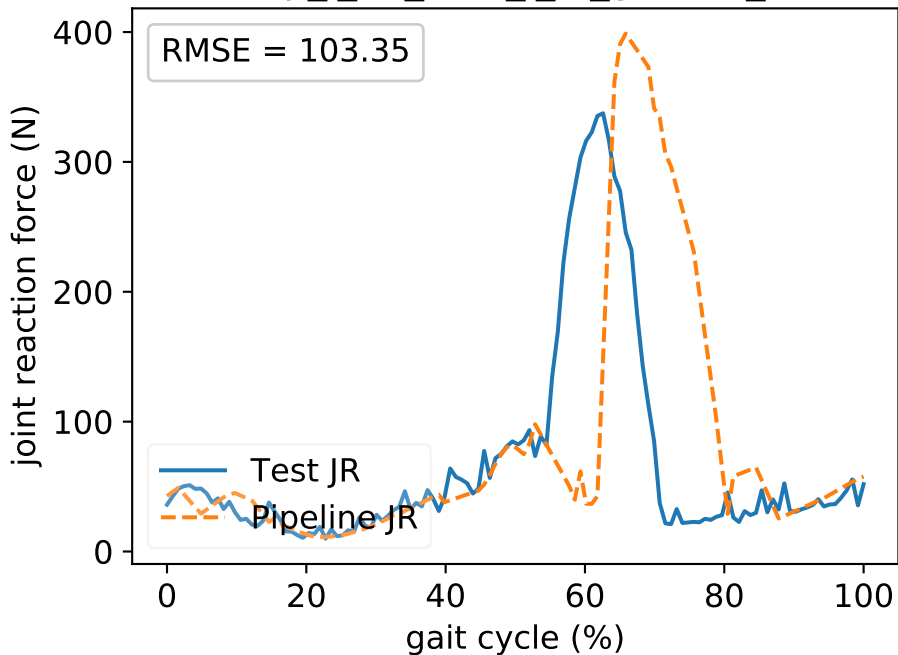
# subtalar\_l\_on\_calcn\_l\_in\_ground\_py



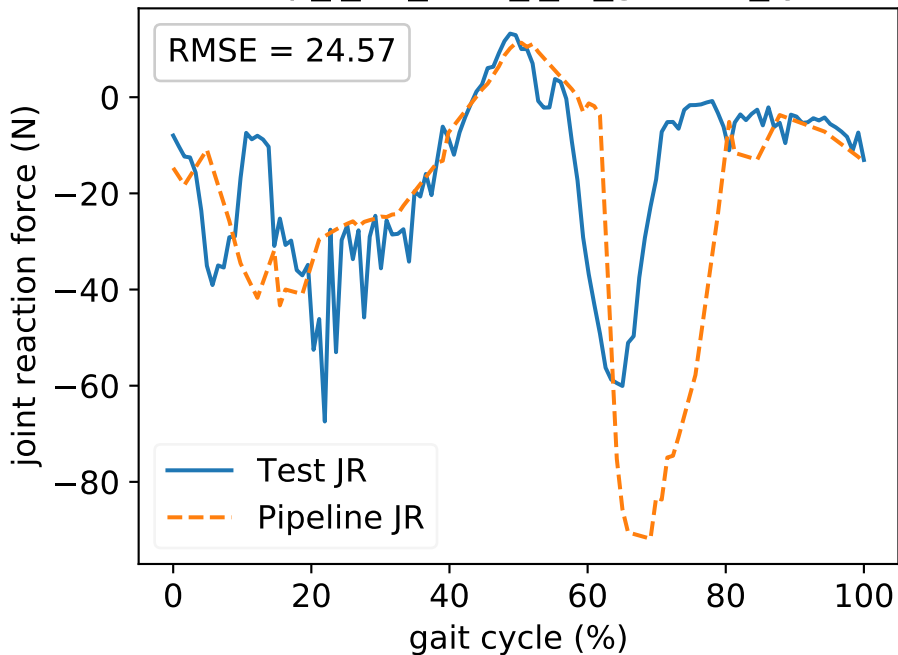
# subtalar\_l\_on\_calcn\_l\_in\_ground\_pz



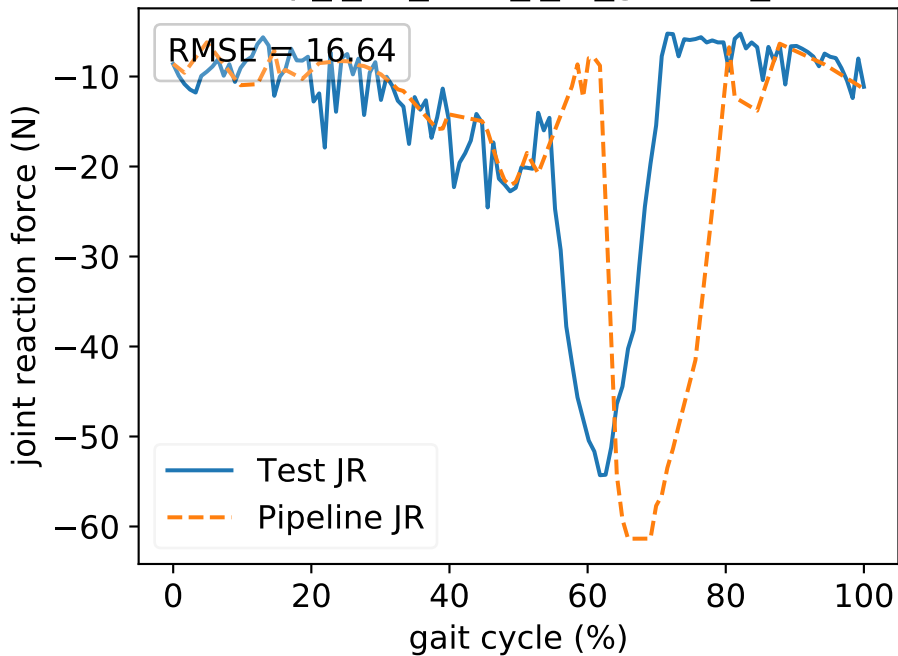
# mtp\_l\_on\_toes\_l\_in\_ground\_fx



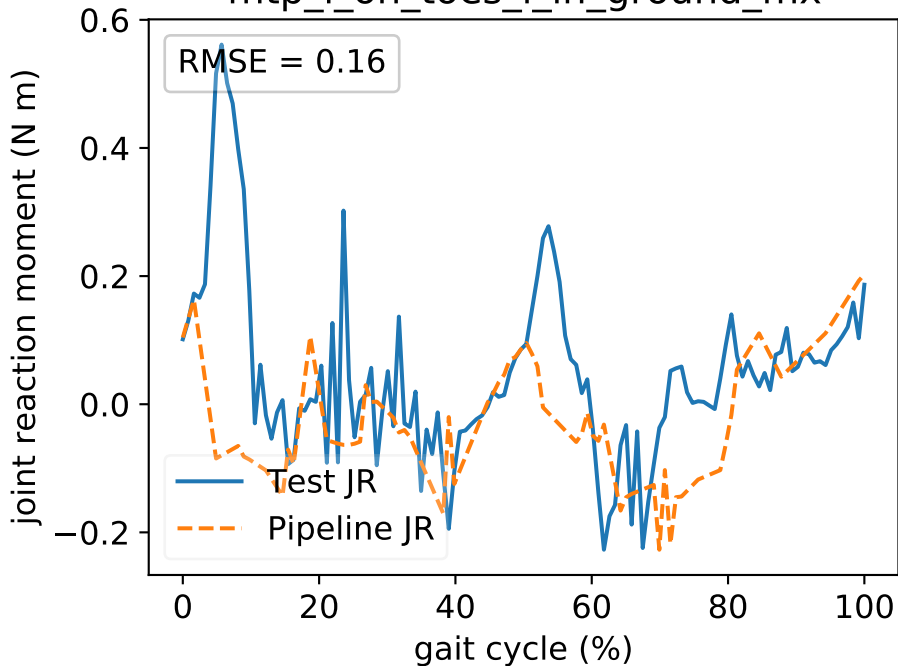
# mtp\_l\_on\_toes\_l\_in\_ground\_fy



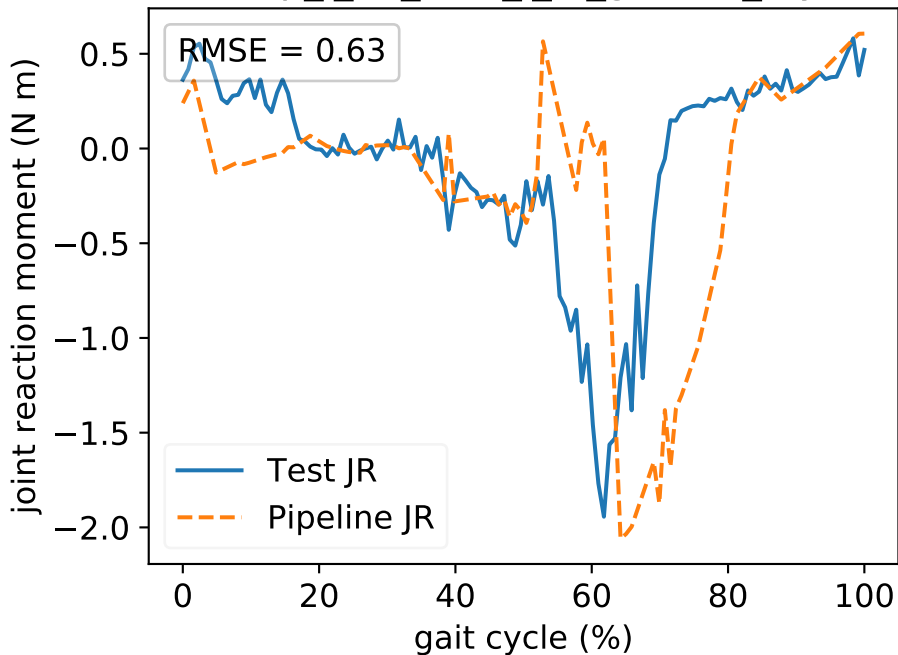
# mtp\_l\_on\_toes\_l\_in\_ground\_fz



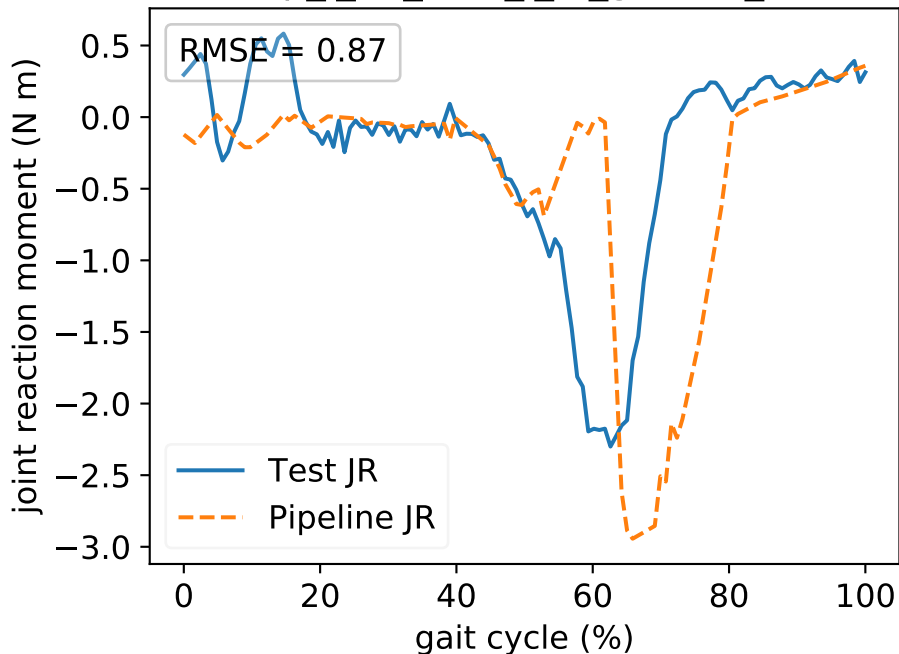
# mtp\_l\_on\_toes\_l\_in\_ground\_mx



# mtp\_l\_on\_toes\_l\_in\_ground\_my

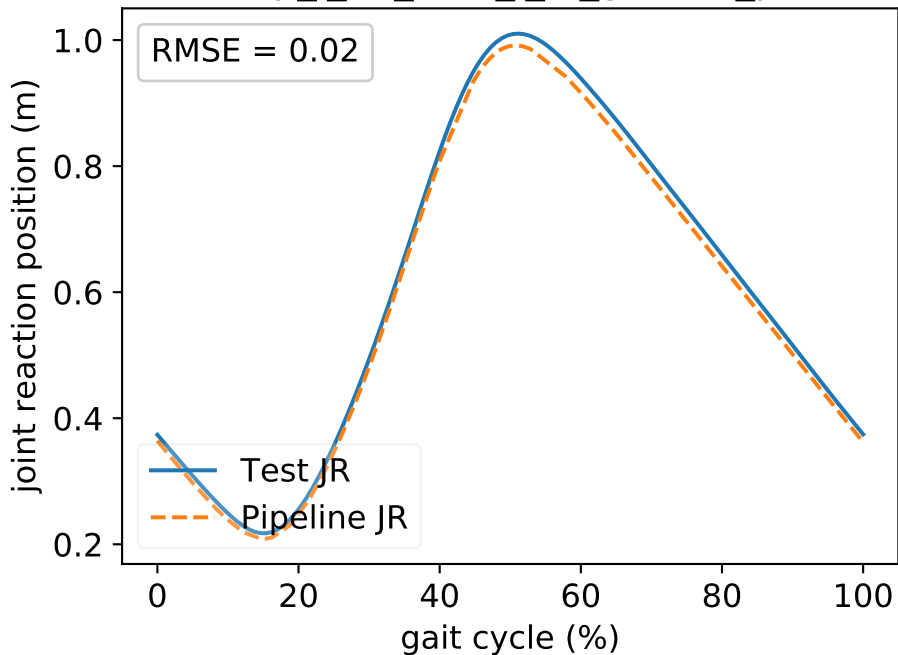


# mtp\_l\_on\_toes\_l\_in\_ground\_mz

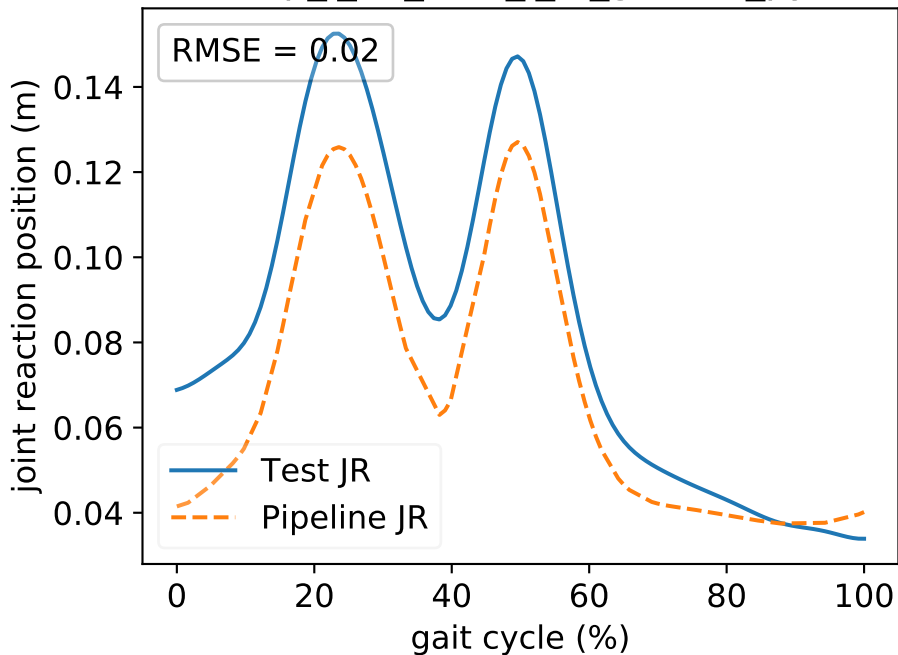




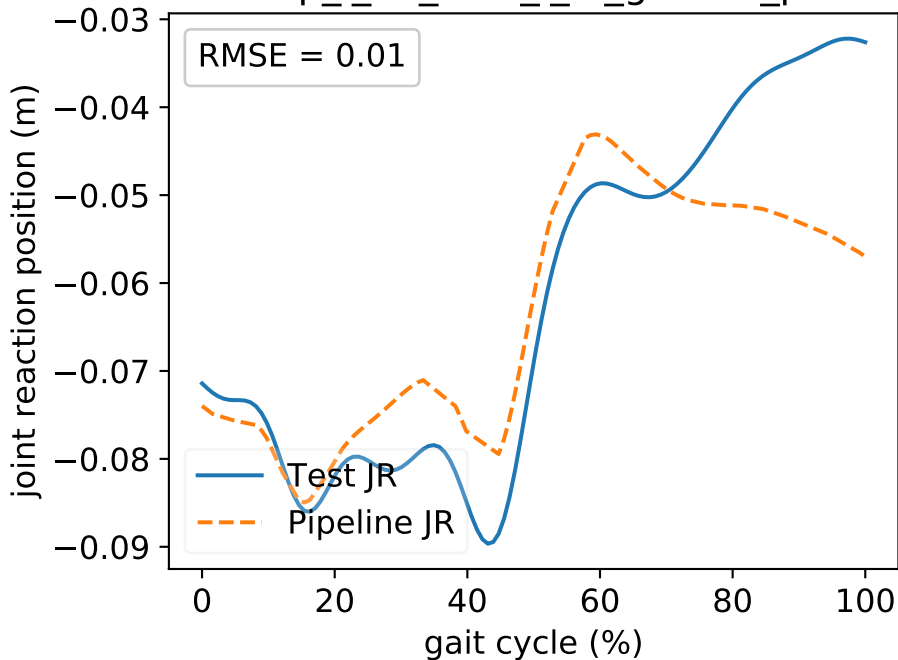
# mtp\_l\_on\_toes\_l\_in\_ground\_px



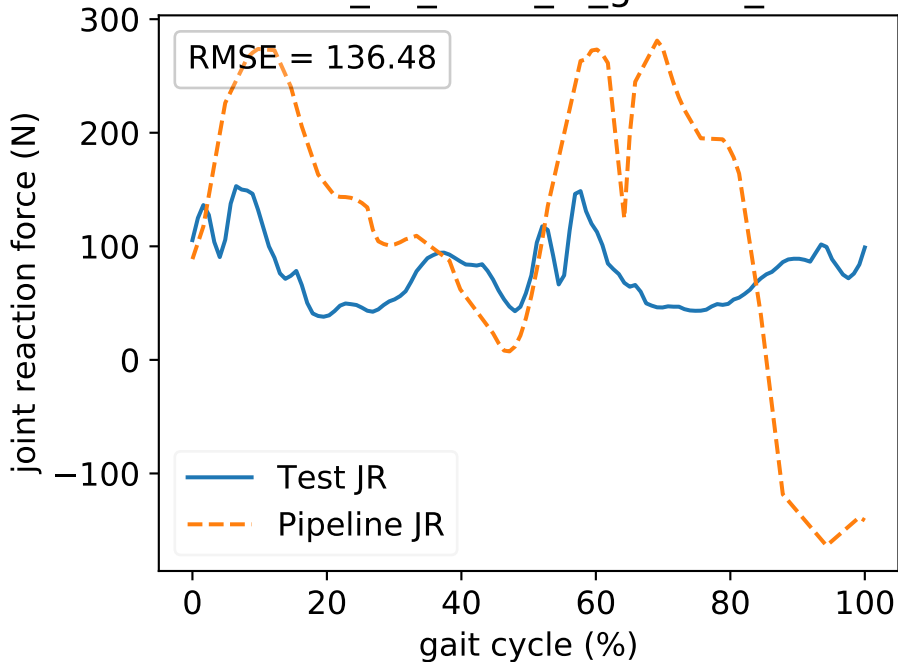
# mtp\_l\_on\_toes\_l\_in\_ground\_py



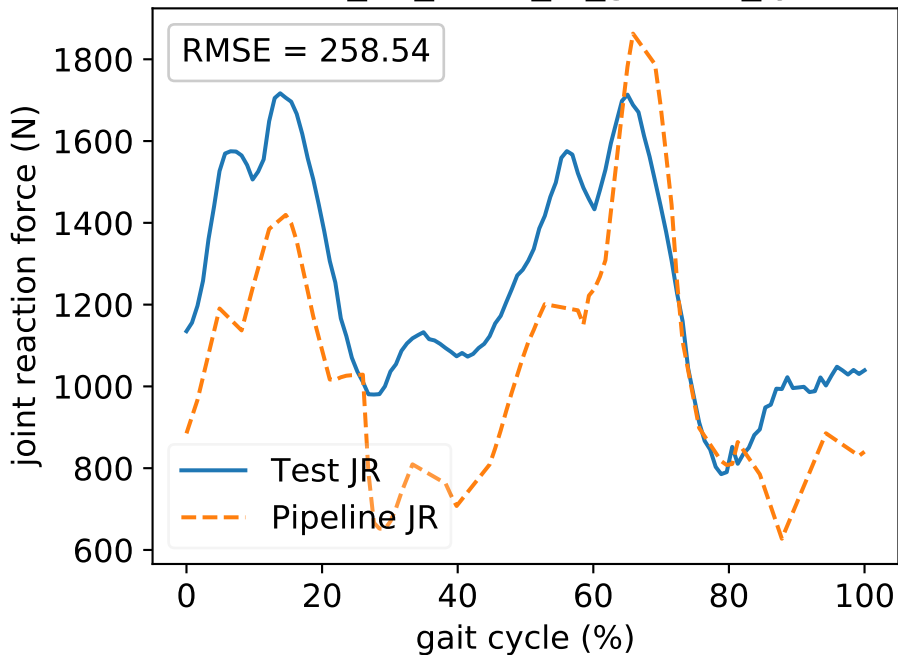
# mtp\_l\_on\_toes\_l\_in\_ground\_pz



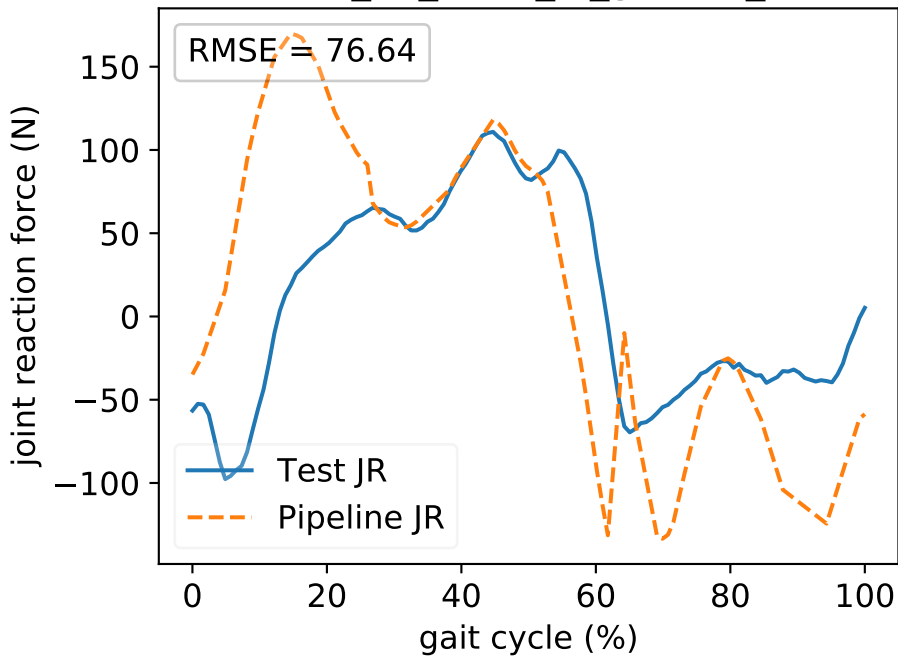
# back\_on\_torso\_in\_ground\_fx



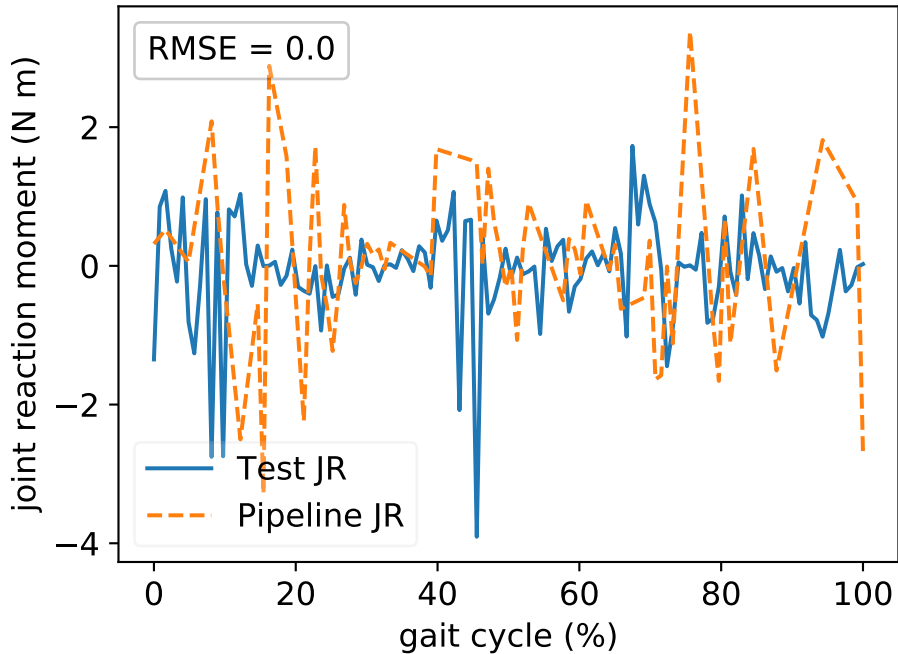
# back\_on\_torso\_in\_ground\_fy

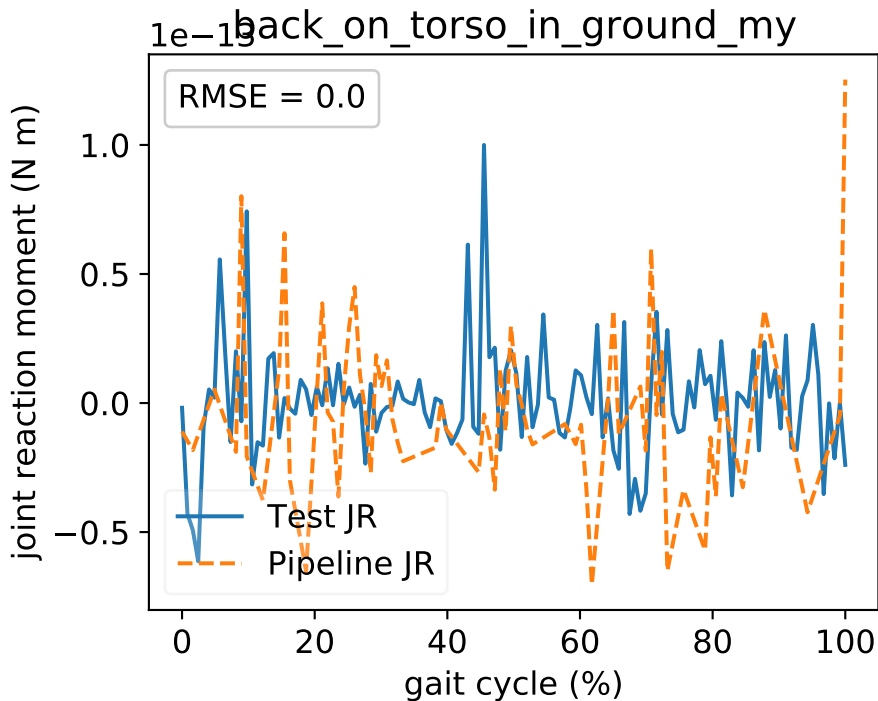


# back\_on\_torso\_in\_ground\_fz



1e-13back\_on\_torso\_in\_ground\_mx







1e-13back\_on\_torso\_in\_ground\_mz

joint reaction moment (N m)

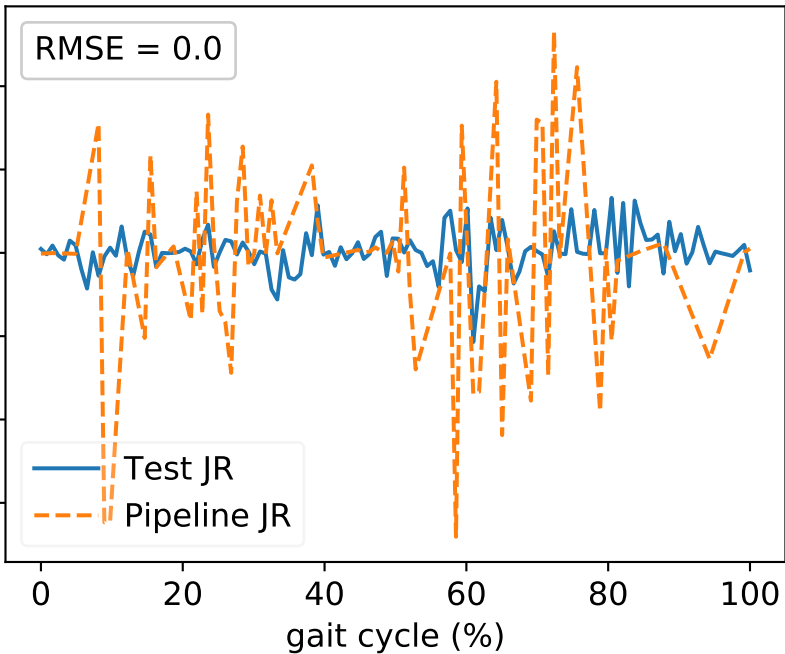
RMSE = 0.0

5.0  
2.5  
0.0  
-2.5  
-5.0  
-7.5

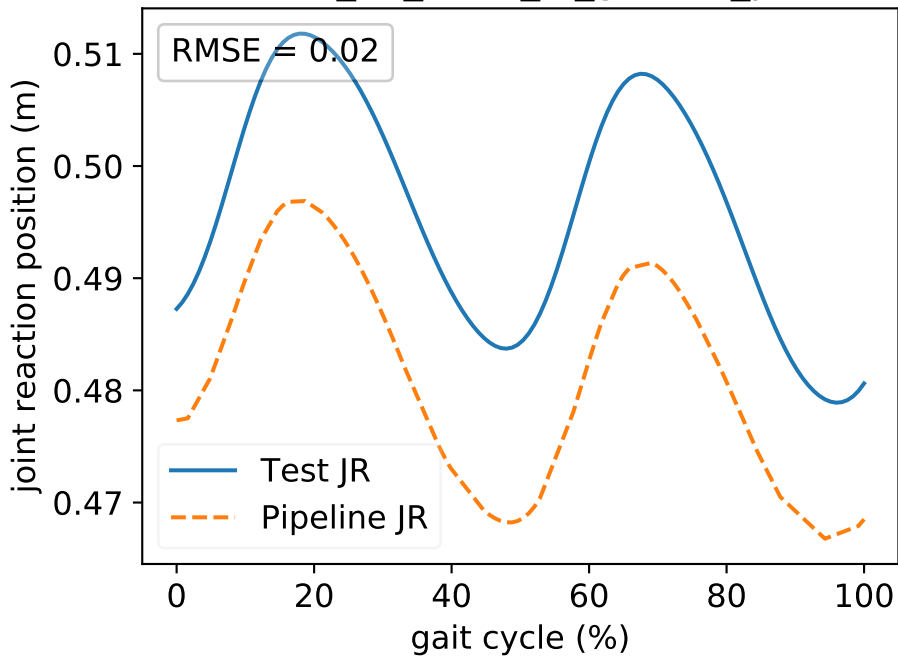
Test JR  
Pipeline JR

gait cycle (%)

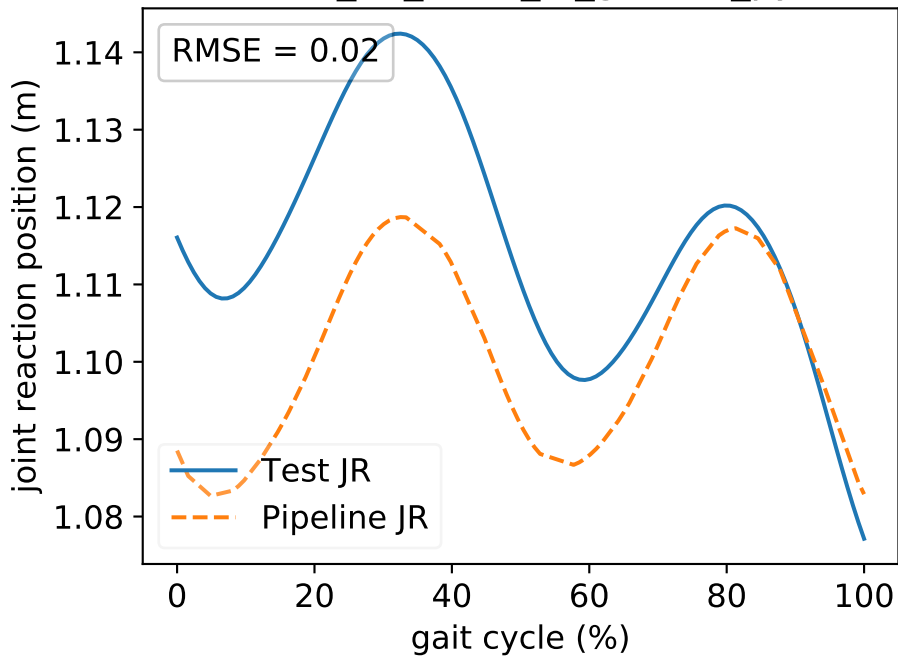
0 20 40 60 80 100



# back\_on\_torso\_in\_ground\_px



# back\_on\_torso\_in\_ground\_py



# back\_on\_torso\_in\_ground\_pz

