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self.starting_states {1: [1248275402.156, 1.9161003, -2.6761519, 0.3903], 2:
[1248275402.156, 0.611703, -3.5200034, 0.3194], 3: [1248275402.156, 1.6835007,
2.6282571, 1.3662], 4: [1248275402.156, 3.8905341, 0.5955913, 2.0958], 5:
[1248275402.156, 3.493743, 2.5765991, -0.5062]}
created a team of 5 distributive robots
***** Simulation Process Started! *****
communication: True
***** Simulation Process Finished! *****
End time: 1248276002.114
GS_CI :
Avg location deviation errors per run: 0.131028836035804
Avg trace of state variances per run: 0.0137620996422773
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
***** Simulation Process Finished! *****
End time: 1248276002.114
LS_cen :
Avg location deviation errors per run: 0.09855139627112566
Avg trace of state variances per run: 0.0228761367225542
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
***** Simulation Process Finished! *****
End time: 1248276002.114
LS_BDA :
Avg location deviation errors per run: 0.10717687837126572
Avg trace of state variances per run: 0.004403229710099785
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
***** Simulation Process Finished! *****
End time: 1248276002.114
LS_CI :
Avg location deviation errors per run: 3.2475548338178277
Avg trace of state variances per run: 0.046854092344047076
created a team of 5 distributive robots
***** Simulation Process Started! *****
communication: True
***** Simulation Process Finished! *****
End time: 1248276002.114
GS_SCI :
Avg location deviation errors per run: 8.733965869745713
Avg trace of state variances per run: -69614.4008695945
*****Algorithm Comparison*****
GS_CI :
Avg location deviation errors per run: 0.131028836035804
Avg trace of state variances per run: 0.0137620996422773
LS_cen :
Avg location deviation errors per run: 0.09855139627112566
Avg trace of state variances per run: 0.0228761367225542
LS_BDA :
Avg location deviation errors per run: 0.10717687837126572
Avg trace of state variances per run: 0.004403229710099785
LS_CI :
Avg location deviation errors per run: 3.2475548338178277
Avg trace of state variances per run: 0.046854092344047076
GS_SCI :
Avg location deviation errors per run: 8.733965869745713

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Avg trace of state variances per run: -69614.4008695945
Plotting Comparison Graphs
image saved
/home/william/CoLo/CoLo-D/UTIAS-dataset/MRCLAM_Dataset3/
***** Initialization Started *****
add synthetic data: True
Absolute datapath:
/home/william/CoLo/CoLo-D/UTIAS-dataset/MRCLAM_Dataset3/
Starting time: 1248294059.159
Starting states:
{1: [1248294059.159, 1.7527411, -4.0277995, 1.3441], 2: [1248294059.159,
4.2218687, 2.0492464, 1.6445], 3: [1248294059.159, 2.1357981, 2.0240751, 1.2551],
4: [1248294059.159, 3.6894842, -3.0569621, -2.1459], 5: [1248294059.159,
0.7728647, -1.0035987, 2.4151]}
***** Initialization Completed *****
self.start_time: 1248294059.159
self.starting_states {1: [1248294059.159, 1.7527411, -4.0277995, 1.3441], 2:
[1248294059.159, 4.2218687, 2.0492464, 1.6445], 3: [1248294059.159, 2.1357981,
2.0240751, 1.2551], 4: [1248294059.159, 3.6894842, -3.0569621, -2.1459], 5:
[1248294059.159, 0.7728647, -1.0035987, 2.4151]}
created a team of 5 distributive robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248294659.15
GS_CI :
Avg location deviation errors per run: 0.17346379790509392
Avg trace of state variances per run: 0.019114442596449874
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248294659.15
LS_cen :
Avg location deviation errors per run: 0.07964568912119711
Avg trace of state variances per run: 0.012777737516951588
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248294659.15
LS_BDA :
Avg location deviation errors per run: 0.08160744438215033
Avg trace of state variances per run: 0.0030616510596689146
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248294659.15
LS_CI :
Avg location deviation errors per run: 2.6651064399934765
Avg trace of state variances per run: 0.03306621402022078
created a team of 5 distributive robots
***** Simulation Process Started! *****
communication: True

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Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248294659.15
GS_SCI :
Avg location deviation errors per run: 4.314872789907221
Avg trace of state variances per run: 0.7203371638906472
*****Algorithm Comparison*****
GS_CI :
Avg location deviation errors per run: 0.17346379790509392
Avg trace of state variances per run: 0.019114442596449874
LS_cen :
Avg location deviation errors per run: 0.07964568912119711
Avg trace of state variances per run: 0.012777737516951588
LS_BDA :
Avg location deviation errors per run: 0.08160744438215033
Avg trace of state variances per run: 0.0030616510596689146
LS_CI :
Avg location deviation errors per run: 2.6651064399934765
Avg trace of state variances per run: 0.03306621402022078
GS_SCI :
Avg location deviation errors per run: 4.314872789907221
Avg trace of state variances per run: 0.7203371638906472
Plotting Comparison Graphs
image saved
/home/william/CoLo/CoLo-D/UTIAS-dataset/MRCLAM_Dataset4/
***** Initialization Started *****
add synthetic data: True
Absolute datapath:
/home/william/CoLo/CoLo-D/UTIAS-dataset/MRCLAM_Dataset4/
Starting time: 1248297548.422
Starting states:
{1: [1248297548.43, 3.7053399, 1.0577033, -1.9404], 2: [1248297548.43, 2.4211797,
-2.3153387, 2.3208], 3: [1248297548.43, 1.2981451, 1.8832491, 2.8286], 4:
[1248297548.43, 1.5988042, 2.9158409, -0.2955], 5: [1248297548.43, 0.6496422,
-1.136631, 0.8351]}
***** Initialization Completed *****
self.start_time: 1248297548.422
self.starting_states {1: [1248297548.43, 3.7053399, 1.0577033, -1.9404], 2:
[1248297548.43, 2.4211797, -2.3153387, 2.3208], 3: [1248297548.43, 1.2981451,
1.8832491, 2.8286], 4: [1248297548.43, 1.5988042, 2.9158409, -0.2955], 5:
[1248297548.43, 0.6496422, -1.136631, 0.8351]}
created a team of 5 distributive robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248298148.411
GS_CI :
Avg location deviation errors per run: 0.11918143452548577
Avg trace of state variances per run: 0.011889184836922324
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248298148.411
LS_cen :
Avg location deviation errors per run: 0.08278903599689814
Avg trace of state variances per run: 0.011549200067148721

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created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
Time inconsistant!
***** Simulation Process Finished! *****
End time: 1248298148.411
LS_BDA :
Avg location deviation errors per run: 0.08437502012061762
Avg trace of state variances per run: 0.00295327365875513
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
Time inconsistant!
***** Simulation Process Finished! *****
End time: 1248298148.411
LS_CI :
Avg location deviation errors per run: 2.816621822376104
Avg trace of state variances per run: 0.03011802309716311
created a team of 5 distributive robots
***** Simulation Process Started! *****
communication: True
Time inconsistant!
***** Simulation Process Finished! *****
End time: 1248298148.411
GS_SCI :
Avg location deviation errors per run: 23.11803337732891
Avg trace of state variances per run: 9.677673823287325
*****Algorithm Comparison*****
GS_CI :
Avg location deviation errors per run: 0.11918143452548577
Avg trace of state variances per run: 0.011889184836922324
LS_cen :
Avg location deviation errors per run: 0.08278903599689814
Avg trace of state variances per run: 0.011549200067148721
LS_BDA :
Avg location deviation errors per run: 0.08437502012061762
Avg trace of state variances per run: 0.00295327365875513
LS_CI :
Avg location deviation errors per run: 2.816621822376104
Avg trace of state variances per run: 0.03011802309716311
GS_SCI :
Avg location deviation errors per run: 23.11803337732891
Avg trace of state variances per run: 9.677673823287325
Plotting Comparison Graphs
image saved
/home/william/CoLo/CoLo-D/UTIAS-dataset/MRCLAM_Dataset5/
***** Initialization Started *****
add synthetic data: True
Absolute datapath:
/home/william/CoLo/CoLo-D/UTIAS-dataset/MRCLAM_Dataset5/
Staring time: 1248362854.945
Staring states:
{1: [1248362854.972, 1.2632608, 3.1061757, -1.6215], 2: [1248362854.972,
2.0399369, 2.0142036, -1.5365], 3: [1248362854.972, 2.8058074, 3.0914785,
-1.6484], 4: [1248362854.972, 3.1146572, 2.0491401, -1.7473], 5: [1248362854.972,
4.255792, 3.2387895, -2.35]}
***** Initialization Completed *****
self.start_time: 1248362854.945
self.starting_states {1: [1248362854.972, 1.2632608, 3.1061757, -1.6215], 2:

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[1248362854.972, 2.0399369, 2.0142036, -1.5365], 3: [1248362854.972, 2.8058074,
3.0914785, -1.6484], 4: [1248362854.972, 3.1146572, 2.0491401, -1.7473], 5:
[1248362854.972, 4.255792, 3.2387895, -2.35]}
created a team of 5 distributive robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248363454.933
GS_CI :
Avg location deviation errors per run: 0.1406582278886995
Avg trace of state variances per run: 0.012140690572241555
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248363454.933
LS_cen :
Avg location deviation errors per run: 0.11362954674944695
Avg trace of state variances per run: 0.01301188067527043
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248363454.933
LS_BDA :
Avg location deviation errors per run: 0.10965380010606038
Avg trace of state variances per run: 0.003233003693750547
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248363454.933
LS_CI :
Avg location deviation errors per run: 4.34838197854895
Avg trace of state variances per run: 0.04701148471767179
created a team of 5 distributive robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248363454.933
GS_SCI :
Avg location deviation errors per run: 5.945358763609234
Avg trace of state variances per run: 27.294190695765394
*****Algorithm Comparison*****
GS_CI :
Avg location deviation errors per run: 0.1406582278886995
Avg trace of state variances per run: 0.012140690572241555
LS_cen :
Avg location deviation errors per run: 0.11362954674944695
Avg trace of state variances per run: 0.01301188067527043
LS_BDA :
Avg location deviation errors per run: 0.10965380010606038
Avg trace of state variances per run: 0.003233003693750547
LS_CI :

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Avg location deviation errors per run: 4.34838197854895
Avg trace of state variances per run: 0.04701148471767179
GS_SCI :
Avg location deviation errors per run: 5.945358763609234
Avg trace of state variances per run: 27.294190695765394
Plotting Comparison Graphs
image saved
/home/william/CoLo/CoLo-D/UTIAS-dataset/MRCLAM_Dataset6/
***** Initialization Started *****
add synthetic data: True
Absolute datapath:
/home/william/CoLo/CoLo-D/UTIAS-dataset/MRCLAM_Dataset6/
Starting time: 1248444180.118
Starting states:
{1: [1248444180.161, 1.4127869, -3.8911131, 2.2694], 2: [1248444180.161, 2.437079,
-0.1812578, 3.0392], 3: [1248444180.161, 2.642434, 2.5330731, -1.6723], 4:
[1248444180.135, 3.4587715, -1.2434013, 3.0741], 5: [1248444180.135, 2.7799865,
-3.3353824, 2.4878]}
***** Initialization Completed *****
self.start_time: 1248444180.118
self.starting_states {1: [1248444180.161, 1.4127869, -3.8911131, 2.2694], 2:
[1248444180.161, 2.437079, -0.1812578, 3.0392], 3: [1248444180.161, 2.642434,
2.5330731, -1.6723], 4: [1248444180.135, 3.4587715, -1.2434013, 3.0741], 5:
[1248444180.135, 2.7799865, -3.3353824, 2.4878]}
created a team of 5 distributive robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248444780.108
GS_CI :
Avg location deviation errors per run: 0.14738975454552478
Avg trace of state variances per run: 0.019874229596457002
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248444780.108
LS_cen :
Avg location deviation errors per run: 0.1780774111088851
Avg trace of state variances per run: 0.026800597249209936
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248444780.108
LS_BDA :
Avg location deviation errors per run: 0.1523842682957682
Avg trace of state variances per run: 0.005325882035689637
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248444780.108
LS_CI :
Avg location deviation errors per run: 2.927441958589269

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Avg trace of state variances per run: 0.04044958164373692
created a team of 5 distributive robots
***** Simulation Process Started! *****
communication: True
Time inconsistant!
***** Simulation Process Finished! *****
End time: 1248444780.108
GS_SCI :
Avg location deviation errors per run: 17.56052270257034
Avg trace of state variances per run: 11.33633350397411
*****Algorithm Comparison*****
GS_CI :
Avg location deviation errors per run: 0.14738975454552478
Avg trace of state variances per run: 0.019874229596457002
LS_cen :
Avg location deviation errors per run: 0.1780774111088851
Avg trace of state variances per run: 0.026800597249209936
LS_BDA :
Avg location deviation errors per run: 0.1523842682957682
Avg trace of state variances per run: 0.005325882035689637
LS_CI :
Avg location deviation errors per run: 2.927441958589269
Avg trace of state variances per run: 0.04044958164373692
GS_SCI :
Avg location deviation errors per run: 17.56052270257034
Avg trace of state variances per run: 11.33633350397411
Plotting Comparison Graphs
image saved
/home/william/CoLo/CoLo-D/UTIAS-dataset/MRCLAM_Dataset7/
***** Initialization Started *****
add synthetic data: True
Absolute datapath:
/home/william/CoLo/CoLo-D/UTIAS-dataset/MRCLAM_Dataset7/
Staring time: 1248446187.116
Staring states:
{1: [1248446187.125, 2.2139089, 4.2288666, -1.7638], 2: [1248446187.125,
3.6973315, 2.9049658, -2.0325], 3: [1248446187.125, 1.061215, 1.6892566, -1.6406],
4: [1248446187.125, 3.1158221, 1.930116, -1.6285], 5: [1248446187.125, 0.3844885,
3.0012633, -1.4323]}
***** Initialization Completed *****
self.start_time: 1248446187.116
self.starting_states {1: [1248446187.125, 2.2139089, 4.2288666, -1.7638], 2:
[1248446187.125, 3.6973315, 2.9049658, -2.0325], 3: [1248446187.125, 1.061215,
1.6892566, -1.6406], 4: [1248446187.125, 3.1158221, 1.930116, -1.6285], 5:
[1248446187.125, 0.3844885, 3.0012633, -1.4323]}
created a team of 5 distributive robots
***** Simulation Process Started! *****
communication: True
***** Simulation Process Finished! *****
End time: 1248446787.116
GS_CI :
Avg location deviation errors per run: 0.16804479073074138
Avg trace of state variances per run: 0.012948697353435226
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
***** Simulation Process Finished! *****
End time: 1248446787.116
LS_cen :

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Avg location deviation errors per run: 0.11974090911463711
Avg trace of state variances per run: 0.015719602712469777
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
***** Simulation Process Finished! *****
End time: 1248446787.116
LS_BDA :
Avg location deviation errors per run: 0.11998350784651426
Avg trace of state variances per run: 0.003701145011473027
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
***** Simulation Process Finished! *****
End time: 1248446787.116
LS_CI :
Avg location deviation errors per run: 3.4509060082283107
Avg trace of state variances per run: 0.06710122913586211
created a team of 5 distributive robots
***** Simulation Process Started! *****
communication: True
***** Simulation Process Finished! *****
End time: 1248446787.116
GS_SCI :
Avg location deviation errors per run: 7.374380429713519
Avg trace of state variances per run: 4.335510647659138
*****Algorithm Comparison*****
GS_CI :
Avg location deviation errors per run: 0.16804479073074138
Avg trace of state variances per run: 0.012948697353435226
LS_cen :
Avg location deviation errors per run: 0.11974090911463711
Avg trace of state variances per run: 0.015719602712469777
LS_BDA :
Avg location deviation errors per run: 0.11998350784651426
Avg trace of state variances per run: 0.003701145011473027
LS_CI :
Avg location deviation errors per run: 3.4509060082283107
Avg trace of state variances per run: 0.06710122913586211
GS_SCI :
Avg location deviation errors per run: 7.374380429713519
Avg trace of state variances per run: 4.335510647659138
Plotting Comparison Graphs
image saved
/home/william/CoLo/CoLo-D/UTIAS-dataset/MRCLAM_Dataset8/
***** Initialization Started *****
add synthetic data: True
Absolute datapath:
/home/william/CoLo/CoLo-D/UTIAS-dataset/MRCLAM_Dataset8/
Staring time: 1248450345.295
Staring states:
{1: [1248450345.295, 1.9499323, -2.4766851, 1.4867], 2: [1248450345.295,
1.4909569, -3.9212672, 1.1582], 3: [1248450345.295, 1.6724895, -3.1881514,
1.1522], 4: [1248450345.303, 0.8685294, -3.3053482, 1.195], 5: [1248450345.303,
2.5278125, -3.4328366, 1.6243]}
***** Initialization Completed *****
self.start_time: 1248450345.295
self.starting_states {1: [1248450345.295, 1.9499323, -2.4766851, 1.4867], 2:
[1248450345.295, 1.4909569, -3.9212672, 1.1582], 3: [1248450345.295, 1.6724895,

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-3.1881514, 1.1522], 4: [1248450345.303, 0.8685294, -3.3053482, 1.195], 5:
[1248450345.303, 2.5278125, -3.4328366, 1.6243]]
created a team of 5 distributive robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248450945.291
GS_CI :
Avg location deviation errors per run: 0.12935262529820857
Avg trace of state variances per run: 0.016730885957620366
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248450945.291
LS_cen :
Avg location deviation errors per run: 0.10500136864812815
Avg trace of state variances per run: 0.016939940852586783
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248450945.291
LS_BDA :
Avg location deviation errors per run: 0.10423069635696493
Avg trace of state variances per run: 0.004148968840191462
created a centralized system for 5 robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248450945.291
LS_CI :
Avg location deviation errors per run: 4.015306219045403
Avg trace of state variances per run: 0.039794112584198724
created a team of 5 distributive robots
***** Simulation Process Started! *****
communication: True
Time inconsistent!
***** Simulation Process Finished! *****
End time: 1248450945.291
GS_SCI :
Avg location deviation errors per run: 8.821873373153027
Avg trace of state variances per run: 57.15228715733775
*****Algorithm Comparison*****
GS_CI :
Avg location deviation errors per run: 0.12935262529820857
Avg trace of state variances per run: 0.016730885957620366
LS_cen :
Avg location deviation errors per run: 0.10500136864812815
Avg trace of state variances per run: 0.016939940852586783
LS_BDA :
Avg location deviation errors per run: 0.10423069635696493
Avg trace of state variances per run: 0.004148968840191462
LS_CI :
Avg location deviation errors per run: 4.015306219045403

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Avg trace of state variances per run: 0.039794112584198724
GS_SCI :
Avg location deviation errors per run: 8.821873373153027
Avg trace of state variances per run: 57.15228715733775
Plotting Comparison Graphs
image saved
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In [11]:
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