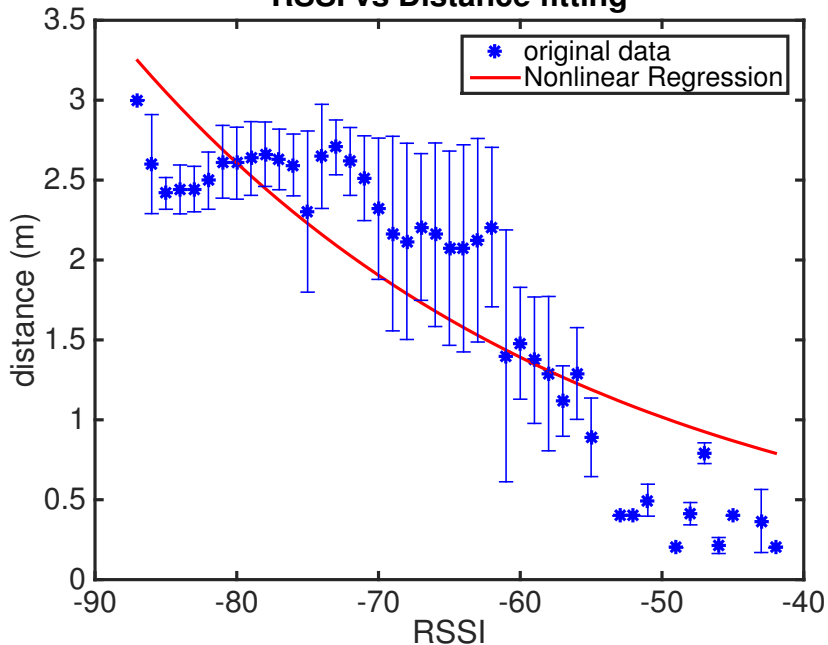
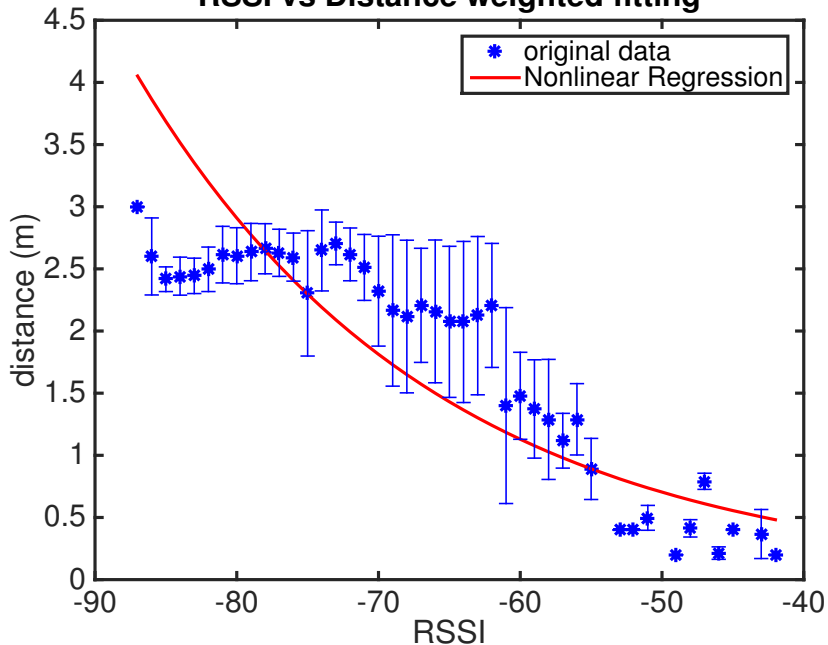


RSSI vs Distance fitting

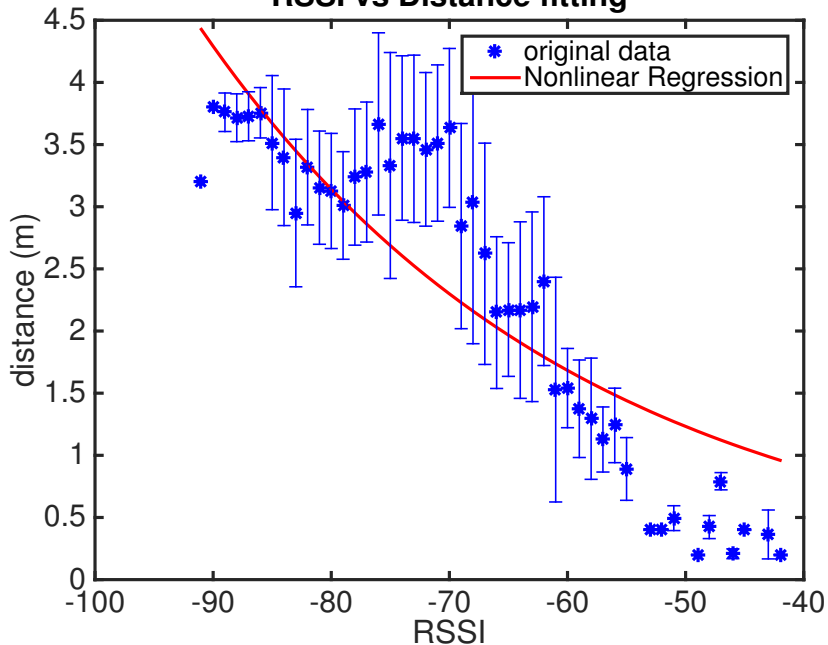


RSSI vs Distance weighted fitting

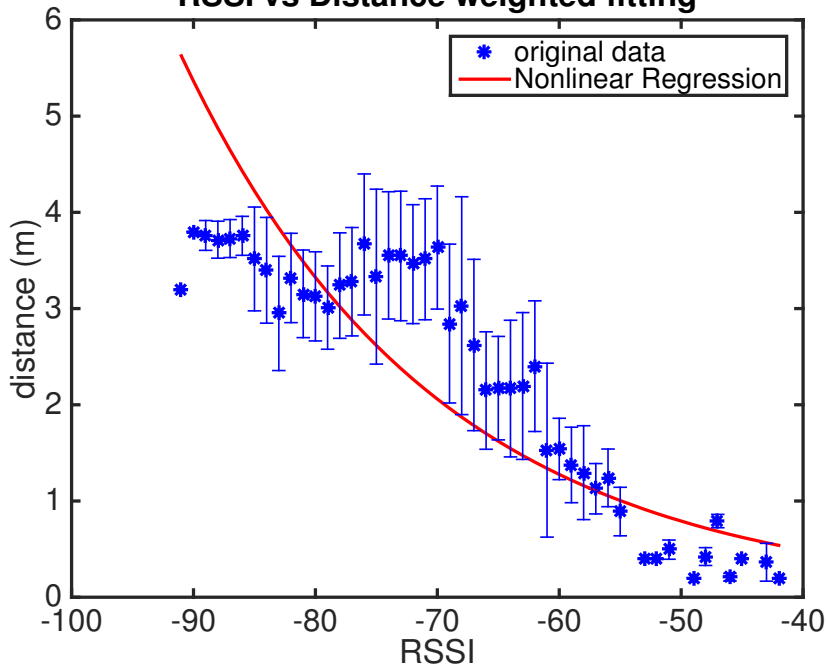


After extend the distance to 4.4m

RSSI vs Distance fitting

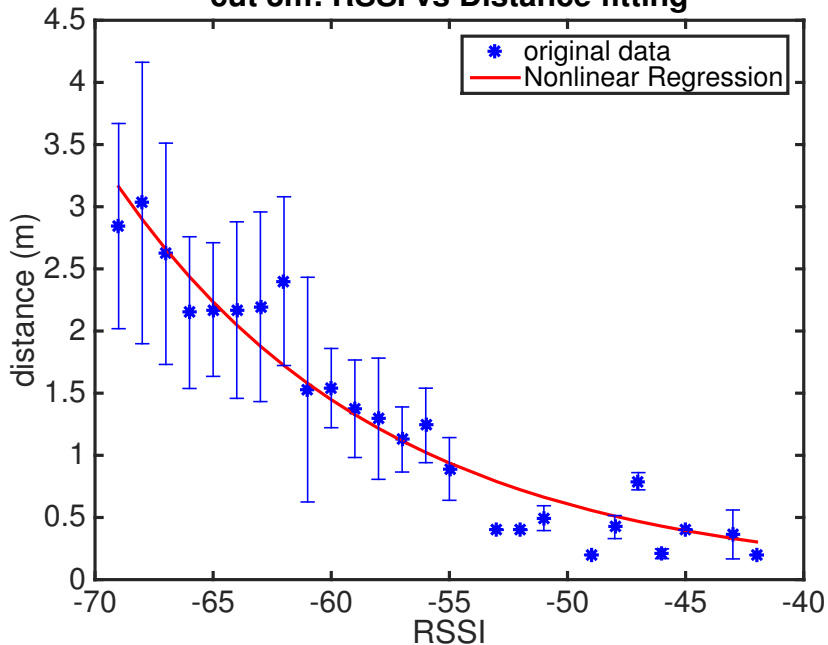


RSSI vs Distance weighted fitting

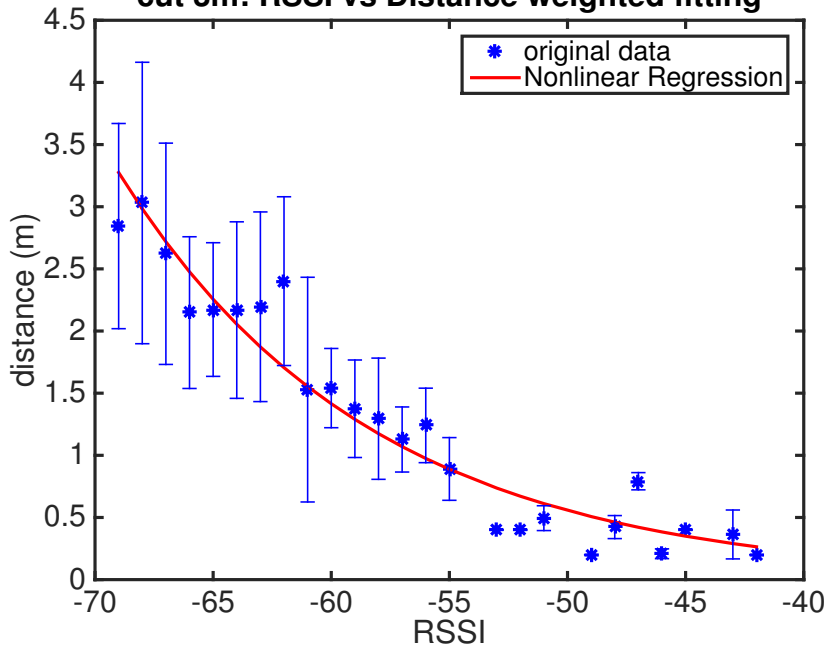


After cutting the mean distance larger than
3m

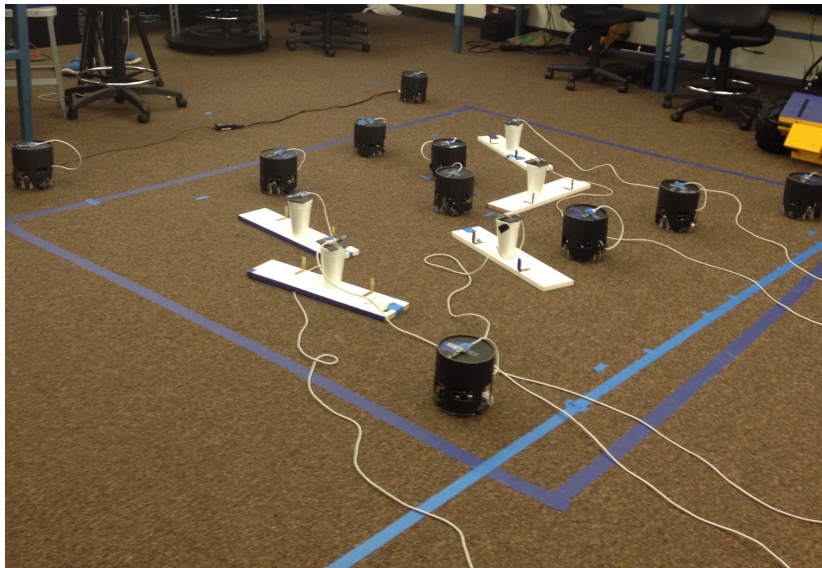
cut 3m: RSSI vs Distance fitting

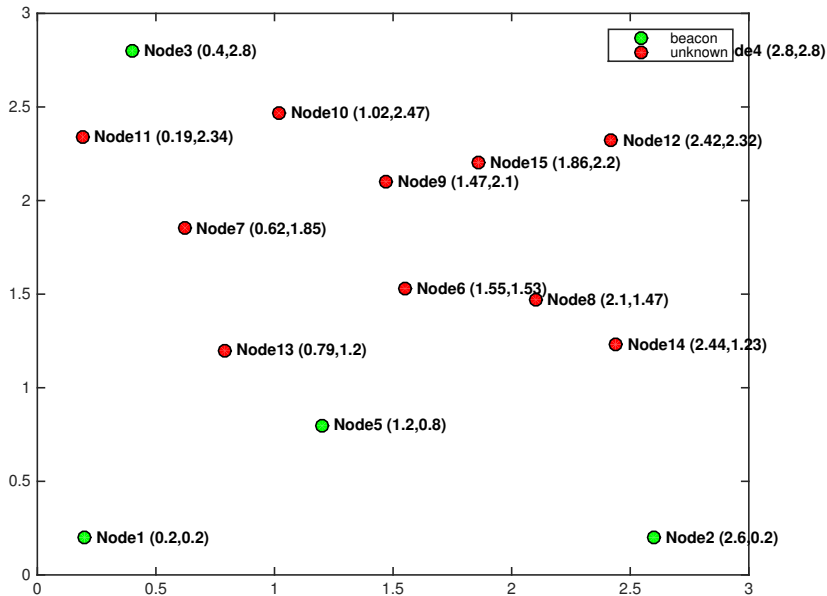


cut 3m: RSSI vs Distance weighted fitting



- ▶ rssi distance direct mapping
- ▶ rssi distance fitting
- ▶ rssi distance weighted fitting
- ▶ cut 3m direct mapping
- ▶ cut 3m fitting
- ▶ cut 3m weighted fitting





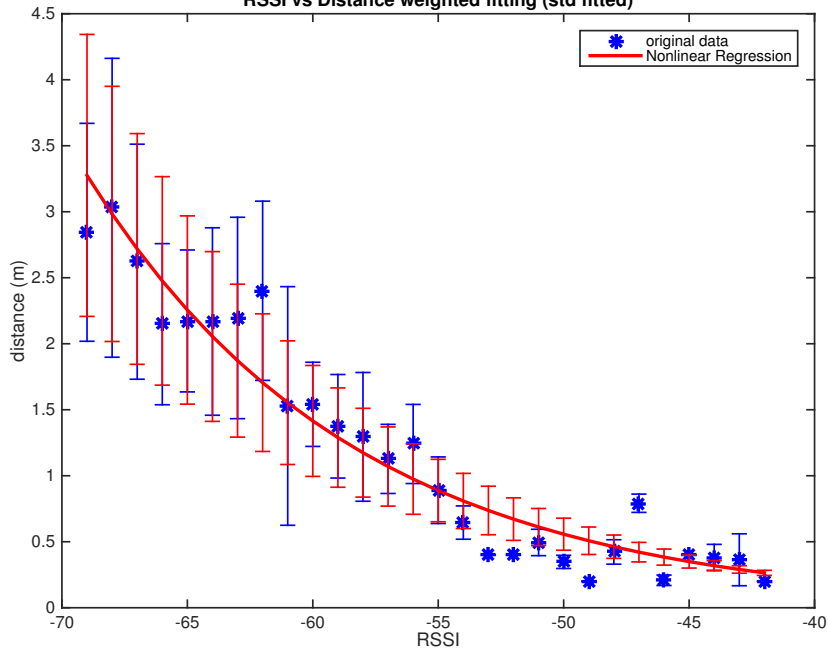
localization errors for kickloc (cut 3m treat outlier as boundary value)

	RSSI to Distance mapping model					
Topology	direct	fitting	weighted fitting	cut 3m direct	cut 3m fitting	cut 3m weighted fitting
1	1.2288	0.5622	0.4823	1.1478	1.1623	1.2600
2	1.2942	1.4003	1.1707	1.3678	1.3309	1.2785
3	1.4390	1.1357	0.9791	1.2043	1.2858	1.3329
4	1.6591	1.3580	1.0879	1.5041	1.4235	1.5219
5	1.4182	1.1367	1.1893	1.2198	1.5674	1.9128
average	1.4079	1.1186	0.9819	1.2887	1.3540	1.4612

localization errors for kickloc (cut 3m treat discard outlier)

	RSSI to Distance mapping model					
Topology	direct	fitting	weighted fitting	cut 3m direct	cut 3m fitting	cut 3m weighted fitting
1	1.2288	0.5622	0.4823	1.1113	1.0564	1.0894
2	1.2942	1.4003	1.1707	0.9697	0.9849	1.0186
3	1.4390	1.1357	0.9791	1.1492	0.9733	1.1656
4	1.6591	1.3580	1.0879	1.4220	1.9286	1.4352
5	1.4182	1.1367	1.1893	1.2885	1.1299	1.6771
average	1.4079	1.1186	0.9819	1.1881	1.2146	1.2772

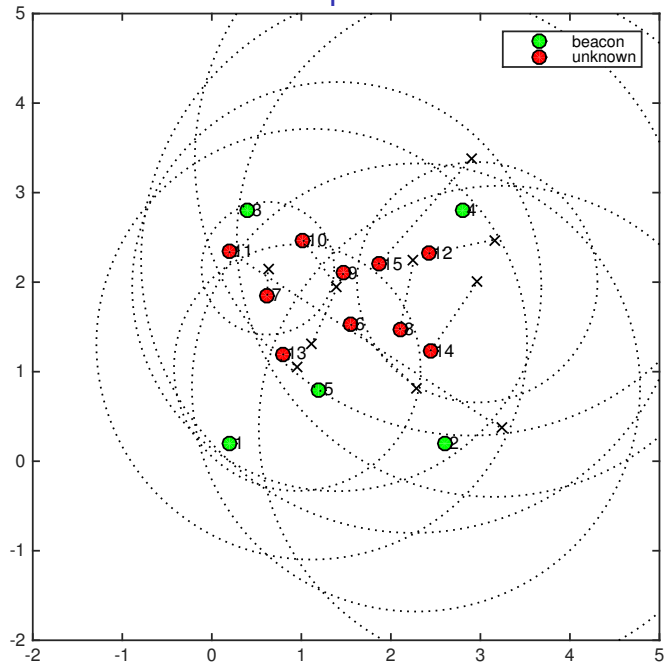
RSSI vs Distance weighted fitting (std fitted)



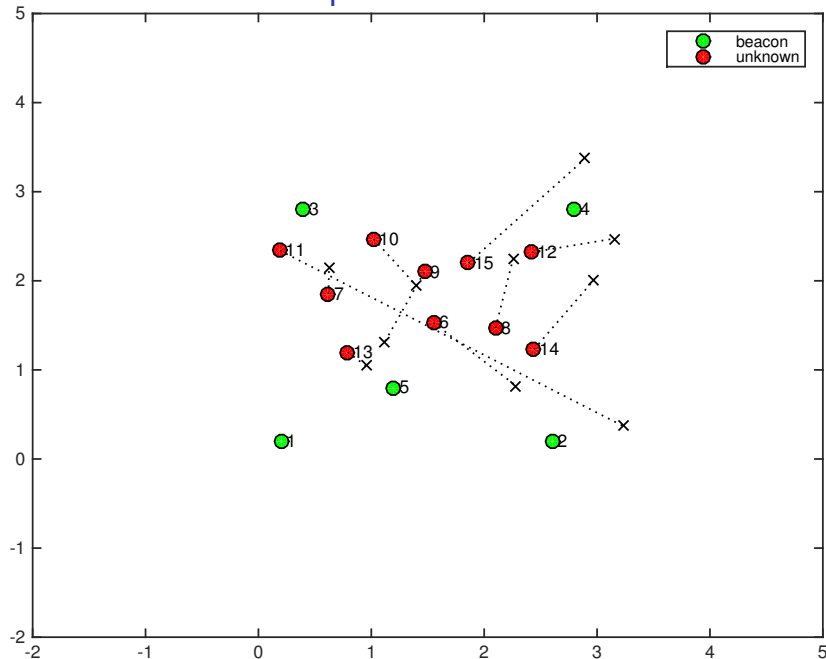
localization errors for kickloc (cut 3m treat discard outlier,
distance std fitted)

	RSSI to Distance mapping model					
Topology	direct	fitting	weighted fitting	cut 3m direct	cut 3m fitting	cut 3m weighted fitting
1	1.3081	0.6765	0.5074	1.0748	1.0409	1.0713
2	1.3366	1.4216	1.2271	0.9021	0.8996	0.9069
3	1.3971	1.0839	0.9344	1.0996	0.9755	0.9869
4	1.7022	1.1045	1.1086	1.4217	1.2172	1.2443
5	1.6719	1.1286	1.0244	1.2712	1.1804	1.1905
average	1.4832	1.0830	0.9604	1.1539	1.0627	1.0800

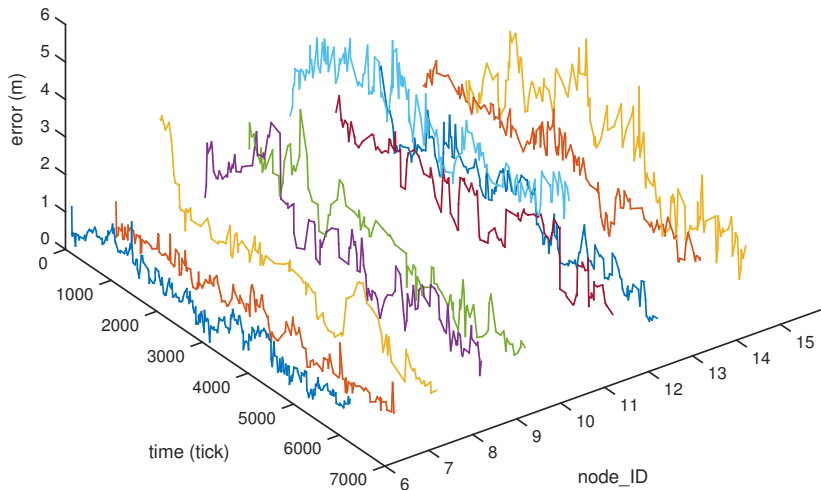
localization result for topo1 method6



localization result for topo1 method6



time evolving result for topo1 method1



localization errors for kickloc when only leveraging beacon information

	RSSI to Distance mapping model					
Topology	direct	fitting	weighted fitting	cut 3m direct	cut 3m fitting	cut 3m weighted fitting
1	1.5973	0.7827	0.7846	1.3661	1.4071	1.4873
2	1.1622	0.7455	0.8318	1.0589	1.2185	1.2768
3	1.3424	0.8064	0.8584	0.9084	1.2069	1.2656
4	1.7863	1.2275	1.0972	1.4245	1.6041	1.6898
5	1.6743	0.8378	0.8051	1.2402	1.4551	1.6199
average	1.2190	0.8800	0.8754	1.1996	1.3783	1.4679

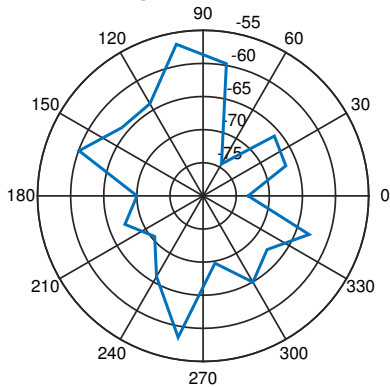
average localization errors for different algorithms

	RSSI to Distance mapping model					
Algorithm	direct	fitting	weighted fitting	cut 3m direct	cut 3m fitting	cut 3m weighted fitting
KickLoc	1.4079	1.1186	0.9819	1.2887	1.3540	1.4612
DV-distance	1.1383	0.7624	0.8661	0.8438	1.0111	1.0975
Min-Max	0.6720	0.6679	0.6615	0.6543	0.6817	0.6975
N-hop Lateration	1.2285	0.9009	1.2003	1.0120	1.1691	1.2712

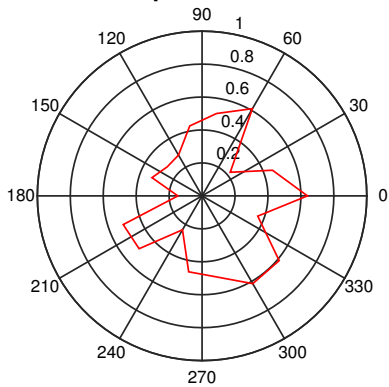
— mean

— std

Polar plot of mean rssi



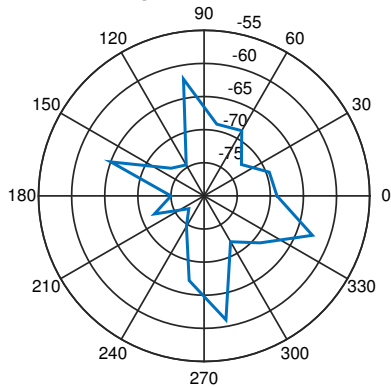
Polar plot of rssi std



— mean

— std

Polar plot of mean rssi



Polar plot of rssi std

