

1 Process and Measurement Noise for Multi-Temperature Extended Kalman Filter

Table 1: Genetic Algorithm parameter output for EKE.

Parameters	Temperature (°C)					
	-20	-10	0	10	25	40
$Q_1 (10^{-6})$	9.66	2.88	4.15	6.21	8.88	3.28
$Q_2 (10^{-6})$	7.55	1.13	3.78	3.21	5.61	1.49
$Q_3 (10^{-6})$	6.78	5.59	5.26	3.45	0.79	0.06
$Q_4 (10^{-6})$	9.11	3.88	6.32	0.88	3.61	1.12
R	0.185	0.181	0.114	0.111	0.196	0.145

2 Process and Measurement Noise for Multi-Temperature Unscented Kalman Filter

Table 2: Genetic Algorithm parameter output for UKF.

Parameters	Temperature (°C)					
	-20	-10	0	10	25	40
$Q_1 (10^{-6})$	9.80	4.07	5.92	5.78	9.34	4.05
$Q_2 (10^{-6})$	8.03	2.94	3.83	6.54	4.04	2.57
$Q_3 (10^{-6})$	1.51	0.61	1.46	7.92	0.34	0.13
$Q_4 (10^{-6})$	9.13	0.75	0.77	1.01	1.77	2.17
R	0.190	0.187	0.130	0.110	0.124	0.108