

Figure 1 is a line graph showing the Mean Squared Error (MSE) of the estimated parameters  $\alpha_1$  and  $\alpha_2$  versus the sample size  $N$ . The x-axis represents  $\alpha_1$  (ranging from 1 to 10), and the y-axis represents MSE (ranging from 0 to 4). Three methods are compared: CRLB (red dotted line with circles), MLE (blue solid line with triangles), and MOM (green dashed line with circles). The CRLB is the lowest curve, followed by MLE, and then MOM. All curves show an increasing trend as  $\alpha_1$  increases.

$\alpha_1$	CRLB	MLE	MOM
1	0.2	0.3	0.4
2	0.4	0.6	0.7
3	0.6	0.9	1.1
4	0.8	1.2	1.5
5	1.0	1.5	2.2
6	1.2	1.8	3.5
7	1.4	2.1	3.2
8	1.6	2.3	4.0
9	1.8	2.5	3.3
10	2.0	2.8	3.7

$\alpha_1$	CRLB (dB)	MOM (dB)	MLE (dB)
1	-9.5	-4.5	-3.5
2	-2.5	2.0	2.0
3	2.0	10.0	9.0
4	5.0	12.0	12.0
5	7.5	15.5	28.5
6	9.5	19.0	26.0
7	11.0	20.0	30.0
8	12.5	21.5	32.0
9	14.0	23.5	39.0
10	15.5	26.5	36.0

$\alpha_1$	CRLB (dB)	MLE (dB)	MOM (dB)
1	-4	-3	-2
2	-2	6	4
3	2	10	17
4	5	14	14
5	7	16	18
6	9	18	21
7	11	22	34
8	12	22	31
9	13	24	36
10	15	25	29

$\alpha_1$	CRLB (dB)	MLE (dB)	MOM (dB)	Proposed (dB)
1	-4	-2	3	-2
2	-1	6	9	6
3	2	12	12	12
4	5	15	41	15
5	7	17	28	17
6	9	19	27	19
7	11	21	25	21
8	13	23	45	23
9	14	25	34	25
10	15	25	42	25

$\alpha_1$	CRLB (dB)	MLE (dB)	MOM (dB)
1	-5	0	5
2	0	10	15
3	5	15	10
4	10	20	15
5	15	25	20
6	20	30	25
7	25	35	30
8	30	40	35
9	35	45	290
10	40	50	55

$\alpha_1$	CRLB (dB)	MLE (dB)	MOM (dB)
1	-5	0	9
2	-1	8	15
3	3	12	15
4	6	15	24
5	8	19	27
6	10	21	41
7	12	23	30
8	13	24	54
9	14	25	37
10	15	26	46

$\alpha_1$	CRLB (dB)	MLE (dB)	MOM (dB)
1	2.5	2.5	7.5
2	4.5	9.5	27.0
3	6.5	13.5	33.0
4	8.5	16.0	24.0
5	10.5	20.0	27.0
6	12.5	21.0	29.5
7	14.5	22.0	41.0
8	16.5	23.0	58.0
9	17.5	23.5	33.0
10	18.5	26.0	36.5

$\alpha_1$	CRLB (dB)	MLE (dB)	MOM (dB)
1	-4	2	30
2	0	8	22
3	4	13	28
4	6	16	38
5	8	18	28
6	10	21	32
7	12	22	40
8	13	25	36
9	14	24	40
10	16	26	42

$\alpha_1$	CRLB (dB)	MLE (dB)	MOM (dB)
1	-4	5	8
2	1	11	17
3	4	15	37
4	7	18	33
5	9	19	27
6	11	21	40
7	12	21	32
8	13	24	33
9	14	24	39
10	16	26	40