

Additional Tables

Table 1: ARL, SDRL and percentile run lengths using different distributions for the EHWMA scheme.

ϕ_1	ϕ_2	L_{EH}	Distribution	ARL	SDRL	P5	P25	P50	P75	P95
0.1	0.05	2.453	N(0,1)	199.5	154.8	13.0	81.0	167.0	281.0	496.0
			t(10)	154.8	117.1	11.0	66.8	132.5	217.0	378.0
			t(100)	198.3	156.2	13.0	81.0	165.0	279.0	498.1
			t(1000)	201.9	160.4	14.0	81.0	165.0	284.0	507.1
			GAM(1,1)	124.5	95.7	5.0	55.0	104.0	172.0	309.1
			GAM(10,1)	183.2	146.0	11.0	75.0	150.0	256.0	464.0
			LogNorm(0,1)	116.4	91.3	6.0	50.0	94.0	161.0	298.0
			X2(30)	185.3	147.4	12.0	77.0	153.0	260.0	463.1
	0.09	2.599	N(0,1)	198.8	162.3	16.0	77.0	157.0	280.0	521.1
			t(10)	161.8	124.8	12.0	69.0	131.0	226.0	403.0
			t(100)	196.1	159.6	14.0	79.0	159.0	269.0	505.0
			t(1000)	201.4	159.4	15.0	81.0	166.0	285.0	505.0
			GAM(1,1)	112.9	83.8	7.0	54.0	96.0	154.3	279.0
			GAM(10,1)	173.3	139.5	13.0	71.0	141.0	241.0	440.0
			LogNorm(0,1)	106.4	80.3	6.0	49.0	89.0	147.0	261.0
			X2(30)	179.1	140.2	15.0	74.0	147.0	252.0	446.1
0.5	0.05	2.809	N(0,1)	201.6	197.8	12.0	59.8	140.0	283.0	592.0
			t(10)	101.7	100.2	7.0	31.0	71.0	139.0	299.0
			t(100)	185.0	183.6	11.0	56.0	128.0	252.0	545.1
			t(1000)	204.4	201.5	12.0	61.0	143.0	284.3	612.1
			GAM(1,1)	53.3	50.3	4.0	18.0	38.0	74.0	152.0
			GAM(10,1)	121.0	117.9	8.0	37.0	85.0	167.0	358.0
			LogNorm(0,1)	54.5	53.2	4.0	17.0	38.0	75.0	161.0
			X2(30)	135.5	129.5	8.0	42.0	97.0	187.0	394.1
	0.25	2.804	N(0,1)	213.8	208.9	11.0	62.0	151.0	300.0	630.2
			t(10)	119.9	116.2	8.0	36.0	84.0	167.0	350.1
			t(100)	193.1	191.3	11.0	57.0	135.0	267.0	582.0
			t(1000)	207.4	207.5	12.0	61.0	144.0	287.0	617.1
			GAM(1,1)	62.9	61.6	4.0	19.0	44.0	87.0	187.0
			GAM(10,1)	142.8	143.7	8.0	42.0	98.0	196.0	423.1
			LogNorm(0,1)	62.7	60.4	4.0	19.0	44.0	86.3	186.0
			X2(30)	156.4	154.9	8.0	47.0	111.0	214.0	466.0

Table 2: ARL, SDRL and percentile run lengths using different distributions for MEHWMA scheme.

ϕ_1 ϕ_2 Distribution	0.1														
	0.05						0.09								
	ARL	SDRL	P5	P25	P50	P75	P95	ARL	SDRL	P5	P25	P50	P75	P95	
p=2	N(0,12)	203	161	15	81	166	289	512	199	165	14	76	160	278	524
	t(10)	143	107	7	63	121	200	350	149	114	10	64	124	207	365
	t(100)	196	159	12	77	160	275	502	195	158	15	78	157	275	499
	t(1000)	201	160	15	78	164	285	508	202	167	15	79	160	282	528
	GAM(1,1)	101	75	3	47	88	140	241	98	71	3	47	86	132	235
	GAM(10,1)	171	137	9	70	139	238	443	166	131	13	69	138	232	415
	LogNorm(0,1)	82	63	3	36	69	114	200	83	62	3	38	70	114	205
	X2(30)	178	142	11	72	146	251	453	177	144	13	71	142	246	451
h_{MEH}	9.14						9.44								
p=4	N(0,12)	204	163	13	81	165	293	518	202	169	17	77	156	283	538
	t(10)	138	105	6	59	115	193	336	146	115	9	61	121	202	369
	t(100)	199	161	15	78	160	281	508	194	160	15	76	156	270	511
	t(1000)	200	166	14	76	160	283	521	200	166	15	76	160	279	519
	GAM(1,1)	83	61	1	38	72	116	198	86	62	3	40	75	119	200
	GAM(10,1)	159	125	10	67	130	218	399	163	126	11	67	136	226	411
	LogNorm(0,1)	63	49	1	27	54	90	154	66	50	1	30	59	93	159
	X2(30)	166	131	10	68	138	230	420	174	139	13	71	143	242	438
h_{MEH}	13.29						13.62								
p=10	N(0,12)	198	163	13	79	155	279	515	202	176	15	75	155	286	533
	t(10)	133	101	7	56	113	187	325	139	106	10	61	121	192	349
	t(100)	190	160	13	71	152	269	492	200	167	18	72	159	283	529
	t(1000)	205	172	12	81	158	285	556	208	176	16	82	161	285	555
	GAM(1,1)	72	53	1	33	66	101	167	78	59	1	34	69	113	190
	GAM(10,1)	151	115	8	64	128	213	368	163	131	9	66	132	232	417
	LogNorm(0,1)	46	35	1	18	41	66	113	50	38	1	20	45	72	124
	X2(30)	162	127	6	67	136	230	404	168	132	11	68	137	238	424
h_{MEH}	23.3						23.8								

Table 3: ARL, SDRL and percentile run lengths using different distributions for MEHWA scheme (continued).

ϕ_1 ϕ_2 Distribution	0.5														
	0.05						0.25								
	ARL	SDRL	P5	P25	P50	P75	P95	ARL	SDRL	P5	P25	P50	P75	P95	
p=2	N(0,12)	183	185	11	52	123	252	558	187	187	10	55	129	261	567
	t(10)	78	76	5	24	55	109	230	94	91	6	30	67	132	271
	t(100)	163	161	9	48	114	224	475	175	174	10	51	120	241	515
	t(1000)	179	177	10	53	125	243	539	188	181	11	55	132	263	561
	GAM(1,1)	36	33	3	12	26	49	102	44	42	3	14	31	61	127
	GAM(10,1)	88	85	6	28	62	123	253	113	113	8	34	78	154	331
	LogNorm(0,1)	35	33	3	11	25	48	100	40	38	3	13	29	57	117
	X2(30)	102	101	7	31	72	139	300	129	125	7	39	91	180	376
h_{MEH}	10.37						10.38								
p=4	N(0,12)	183	183	11	54	126	250	546	184	187	9	51	126	256	557
	t(10)	66	64	5	20	47	90	193	82	79	5	24	57	113	242
	t(100)	158	156	9	48	109	217	472	170	170	10	49	117	234	507
	t(1000)	179	177	10	53	123	250	536	182	183	10	53	127	250	549
	GAM(1,1)	27	24	2	10	20	37	75	33	32	2	10	24	46	97
	GAM(10,1)	76	73	5	25	55	103	224	97	96	6	28	67	133	287
	LogNorm(0,1)	23	22	2	8	17	32	67	28	28	2	9	19	37	82
	X2(30)	90	89	5	28	63	124	264	114	114	7	33	79	158	339
h_{MEH}	14.6						14.6								
p=10	N(0,12)	183	176	11	56	130	253	538	195	191	11	57	136	274	591
	t(10)	56	52	4	19	41	79	163	75	73	5	23	53	102	221
	t(100)	164	158	9	50	117	232	474	165	162	9	52	120	223	492
	t(1000)	180	179	9	55	123	252	520	191	189	12	59	136	265	553
	GAM(1,1)	20	19	1	7	15	27	56	26	24	1	9	19	35	78
	GAM(10,1)	69	65	5	20	50	95	203	89	87	6	26	63	126	256
	LogNorm(0,1)	16	14	1	6	12	22	42	18	17	1	6	13	24	50
	X2(30)	85	81	7	28	60	116	250	105	105	5	30	70	146	329
h_{MEH}	24.95						24.97								

ϕ_1 ϕ_2 L	0.1		0.05		0.09		0.05		0.25		0.2		0.05		0.5		0.05		0.25		0.9		0.1		0.25	
	0.01	0.05	0.01	0.05	0.01	0.05	0.01	0.05	0.01	0.05	0.01	0.05	0.01	0.05	0.01	0.05	0.01	0.05	0.01	0.05	0.01	0.05	0.01	0.05	0.01	0.05
Shifts	0.00	155.9	158.5	163.9	184.2	188.2	191.1	198.1	198.7	197.6	197.6	197.6	200.5	196.9	200.4	200.4	200.5	196.9	200.4	200.4	200.5	196.9	200.4	200.4	200.5	153.4
	0.25	42.2	44.0	46.2	59.7	61.7	74.1	100.6	102.1	110.7	110.7	110.7	146.6	146.5	153.4	153.4	146.6	146.5	153.4	153.4	146.6	146.5	153.4	153.4	146.6	83.7
	0.50	14.8	15.3	16.0	18.9	20.1	23.7	36.2	38.1	45.2	45.2	45.2	80.2	79.5	83.7	83.7	80.2	79.5	83.7	83.7	80.2	79.5	83.7	83.7	80.2	44.3
	0.75	7.3	7.7	8.0	8.6	9.3	11.0	16.0	16.2	19.7	19.7	19.7	40.7	41.9	44.3	44.3	40.7	41.9	44.3	44.3	40.7	41.9	44.3	44.3	40.7	24.8
	1.00	4.5	4.6	4.8	5.0	5.2	6.0	8.0	8.3	10.1	10.1	10.1	22.7	22.3	24.8	24.8	22.7	22.3	24.8	24.8	22.7	22.3	24.8	24.8	22.7	13.9
	1.25	3.0	3.1	3.2	3.2	3.3	3.8	4.6	4.9	5.6	5.6	5.6	12.8	13.0	13.9	13.9	12.8	13.0	13.9	13.9	12.8	13.0	13.9	13.9	12.8	8.4
	1.50	2.1	2.2	2.3	2.3	2.3	2.6	3.0	3.1	3.7	3.7	3.7	7.9	7.9	8.4	8.4	7.9	7.9	8.4	8.4	7.9	7.9	8.4	8.4	7.9	5.4
	1.75	1.7	1.7	1.8	1.7	1.8	1.9	2.1	2.2	2.4	2.4	2.4	5.0	5.0	5.4	5.4	5.0	5.0	5.4	5.4	5.0	5.0	5.4	5.4	5.0	3.6
	2.00	1.4	1.4	1.5	1.4	1.4	1.5	1.5	1.6	1.7	1.7	1.7	3.3	3.4	3.6	3.6	3.3	3.4	3.6	3.6	3.3	3.4	3.6	3.6	3.3	2.5
	2.25	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3	2.3	2.3	2.5	2.5	2.3	2.3	2.5	2.5	2.3	2.3	2.5	2.5	2.3	1.8
	2.50	1.1	1.1	1.1	1.0	1.0	1.1	0.9	1.0	1.0	1.0	1.0	1.6	1.6	1.8	1.8	1.6	1.6	1.8	1.8	1.6	1.6	1.8	1.8	1.6	1.3
	2.75	1.0	1.0	1.0	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	1.2	1.3	1.3	1.3	1.2	1.3	1.3	1.3	1.2	1.3	1.3	1.3	1.2	1.0
	3.00	0.9	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.9	1.0	1.0	1.0	0.9	0.9	1.0	1.0	0.9	1.0	1.0	1.0	0.9	0.7
	ESDRL0,1	17.20	17.89	18.73	23.04	24.07	28.67	40.20	41.17	46.43	46.43	46.43	72.54	72.56	76.55	76.55	72.54	72.56	76.55	76.55	72.54	72.56	76.55	76.55	72.54	7.84
	ESDRL1,2	2.06	2.12	2.21	2.13	2.20	2.46	2.81	2.93	3.38	3.38	3.38	7.23	7.30	7.84	7.84	7.23	7.30	7.84	7.84	7.23	7.30	7.84	7.84	7.23	1.63
	ESDRL2,3	1.05	1.06	1.09	0.96	0.96	1.00	0.89	0.90	0.94	0.94	0.94	1.52	1.54	1.63	1.63	1.52	1.54	1.63	1.63	1.52	1.54	1.63	1.63	1.52	42.19
	ESDRL0,2	9.63	10.00	10.47	12.58	13.13	15.57	21.51	22.05	24.90	24.90	24.90	39.88	39.93	42.19	42.19	39.88	39.93	42.19	42.19	39.88	39.93	42.19	42.19	39.88	4.74
	ESDRL1,3	1.56	1.59	1.65	1.54	1.58	1.73	1.85	1.92	2.16	2.16	2.16	4.37	4.42	4.74	4.74	4.37	4.42	4.74	4.74	4.37	4.42	4.74	4.74	4.37	28.67
	ESDRL0,3	6.77	7.02	7.34	8.71	9.08	10.71	14.63	15.00	16.92	16.92	16.92	27.09	27.13	28.67	28.67	27.09	27.13	28.67	28.67	27.09	27.13	28.67	28.67	27.09	2.801

Table 4: SDRL and expected SDRL results for the EHWMA scheme

ϕ_1 ϕ_2 L	0.1		0.09		0.25		0.5		0.9	
	0.01	0.05	0.01	0.05	0.01	0.2	0.05	0.1	0.05	0.1
	2.516	2.54	2.6	2.772	2.763	2.762	2.804	2.803	2.804	2.801
0.00	170	166	161	149	145	144	138	141	140	138
0.25	46	48	51	54	55	61	72	74	80	103
0.50	18	19	20	21	21	23	28	29	34	55
0.75	10	10	11	11	11	12	14	14	16	29
1.00	6	7	7	7	7	8	8	8	9	16
1.25	5	5	5	5	5	5	5	5	6	10
1.50	4	4	4	4	4	4	4	4	4	6
1.75	3	3	3	3	3	3	3	3	3	4
2.00	3	3	3	3	3	3	2	2	2	3
2.25	3	3	3	2	2	2	2	2	2	2
2.50	2	2	2	2	2	2	2	2	2	2
2.75	1	1	1	2	2	2	2	2	2	2
3.00	1	1	1	1	1	1	1	1	1	1
EMRL0,1	20	21	22	23	24	26	31	31	35	53
EMRL1,2	4	4	4	4	4	4	4	4	4	6
EMRL2,3	2	2	2	2	2	2	2	2	2	2
EMRL0,2	12	12	13	14	14	15	17	17	19	28
EMRL1,3	3	3	3	3	3	3	3	3	3	4
EMRL0,3	9	9	9	10	10	11	12	12	13	19

Table 5: MRL and expected MRL results for the EHWMA scheme

ϕ_2 h_{MEH}	$\phi_1=0.1$										$\phi_1=0.25$																				
	$p=2$					$p=3$					$p=4$					$p=2$					$p=3$					$p=4$					
	0.01	0.05	0.09	0.15	0.2	0.01	0.05	0.09	0.15	0.2	0.01	0.05	0.09	0.15	0.2	0.05	0.1	0.15	0.2	0.05	0.1	0.15	0.2	0.05	0.1	0.15	0.2	0.05	0.1	0.15	0.2
Shifts	0.00	161.9	168.0	165.6	169.8	166.1	167.7	167.3	171.0	167.4	186.4	185.8	191.5	189.5	194.7	193.8	181.5	206.1	206.1	193.8	181.5	206.1	206.1	193.8	181.5	206.1	206.1	193.8	181.5	206.1	206.1
	0.25	47.4	51.0	52.3	50.3	53.0	58.1	54.2	60.9	58.5	73.5	76.6	86.7	85.8	88.3	94.1	89.7	86.8	86.8	94.1	89.7	86.8	86.8	94.1	89.7	86.8	86.8	94.1	89.7	86.8	86.8
	0.50	16.9	16.9	18.5	18.2	18.3	21.3	19.8	20.6	21.6	22.5	25.2	30.7	26.9	27.6	35.0	28.7	31.1	31.1	35.0	28.7	31.1	31.1	35.0	28.7	31.1	31.1	35.0	28.7	31.1	31.1
	0.75	8.5	8.9	9.1	9.3	9.3	10.1	9.6	10.3	10.7	10.1	10.9	13.3	12.2	12.7	14.8	12.5	13.2	13.2	14.8	12.5	13.2	13.2	14.8	12.5	13.2	13.2	14.8	12.5	13.2	13.2
	1.00	5.1	5.1	5.5	5.4	5.5	5.7	5.8	6.1	6.4	5.8	6.2	7.3	6.6	6.8	8.2	7.3	7.4	7.4	8.2	7.3	7.4	7.4	8.2	7.3	7.4	7.4	8.2	7.3	7.4	7.4
	1.25	3.5	3.5	3.7	3.7	3.9	3.9	3.8	4.0	4.1	3.7	4.0	4.6	4.1	4.5	5.4	4.3	4.6	4.6	5.4	4.3	4.6	4.6	5.4	4.3	4.6	4.6	5.4	4.3	4.6	4.6
	1.50	2.4	2.5	2.6	2.7	2.6	2.8	2.9	2.9	3.1	2.7	2.7	2.9	2.8	2.9	3.4	3.0	3.1	3.1	3.4	3.0	3.1	3.1	3.4	3.0	3.1	3.1	3.4	3.0	3.1	3.1
	1.75	1.9	1.9	2.0	2.0	2.0	2.1	2.1	2.1	2.2	1.9	2.0	2.3	2.1	2.1	2.5	2.1	2.3	2.3	2.5	2.1	2.3	2.3	2.5	2.1	2.3	2.3	2.5	2.1	2.3	2.3
	2.00	1.6	1.5	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.5	1.6	1.7	1.7	1.6	1.8	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.8	1.7	1.7	1.7
	2.25	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.2	1.2	1.4	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
2.50	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.1	1.1	1.1	1.2	1.2	1.3	1.2	1.2	1.2	1.3	1.2	1.2	1.2	1.3	1.2	1.2	1.2	1.3	1.2	1.2	1.2	1.2
2.75	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.0	1.0	1.0	1.0	1.0	1.1	1.0	1.0	1.0	1.1	1.0	1.0	1.0	1.1	1.0	1.0	1.0	1.1	1.0	1.0	1.0	1.0
3.00	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
ESDRL0,1	19.5	20.5	21.4	20.8	21.5	23.8	22.4	24.5	24.3	28.0	29.7	34.5	32.9	33.8	38.0	34.5	34.5	34.5	38.0	34.5	34.5	34.5	38.0	34.5	34.5	34.5	38.0	34.5	34.5	34.5	34.5
ESDRL1,2	2.4	2.4	2.5	2.5	2.5	2.6	2.6	2.7	2.8	2.4	2.6	2.9	2.7	2.8	3.3	2.4	2.6	2.9	2.7	2.8	2.4	2.6	2.9	2.7	2.8	2.4	2.6	2.9	2.7	2.8	2.4
ESDRL2,3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.0	1.2	1.1	1.2	1.1	1.2	1.1	1.1	1.1	1.2	1.1	1.1	1.1	1.2	1.1	1.1	1.1	1.2	1.1	1.1	1.1	1.1
ESDRL0,2	10.9	11.4	11.9	11.6	12.0	13.2	12.5	13.6	13.5	15.2	16.1	18.7	17.8	18.3	20.6	15.2	16.1	18.7	17.8	18.3	15.2	16.1	18.7	17.8	18.3	15.2	16.1	18.7	17.8	18.3	15.2
ESDRL1,3	1.8	1.8	1.8	1.9	1.9	1.9	1.9	2.0	2.0	1.7	1.8	2.0	1.9	2.0	2.2	1.7	1.8	2.0	1.9	2.0	1.7	1.8	2.0	1.9	2.0	1.7	1.8	2.0	1.9	2.0	1.7
ESDRL0,3	7.7	8.0	8.3	8.2	8.4	9.2	8.7	9.5	9.4	10.5	11.1	12.8	12.2	12.6	14.2	10.5	11.1	12.8	12.2	12.6	10.5	11.1	12.8	12.2	12.6	10.5	11.1	12.8	12.2	12.6	10.5

Table 6: SDRL and expected SDRL results for the MEHMA scheme

ϕ_2 h_{MEH}	$\phi_1=0.1$						$\phi_1=0.25$						$p=4$ 0.1 14.62			
	$p=2$			$p=3$			$p=4$			$p=2$				$p=3$		
	0.01 9	0.05 9.15	0.09 9.44	0.01 11.09	0.05 11.32	0.09 11.73	0.01 13.1	0.05 13.29	0.09 13.62	0.05 10.34	0.1 10.37	0.2 10.38		0.05 12.7	0.1 12.7	0.2 12.62
0.00	166	167	164	160	166	153	168	167	150	150	147	142	151	147	145	145
0.25	53	56	59	57	61	66	63	68	69	62	71	73	72	75	77	75
0.50	22	24	24	24	26	28	26	28	29	25	27	29	29	30	33	31
0.75	12	13	13	13	14	15	15	15	16	13	14	15	15	16	17	16
1.00	8	8	8	9	9	9	9	10	10	8	9	9	10	10	11	10
1.25	6	6	6	6	6	7	7	7	7	6	6	6	6	7	7	7
1.50	4	4	5	5	5	5	5	5	6	4	5	5	5	5	5	5
1.75	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2.00	3	3	3	3	3	3	4	4	4	3	3	3	3	3	3	3
2.25	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
2.50	3	3	3	3	3	3	3	3	3	2	2	2	3	3	3	3
2.75	2	2	2	2	2	3	3	3	3	2	2	2	2	2	2	2
3.00	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2
EMRL0,1	24	25	26	26	28	30	28	30	31	27	30	32	32	33	35	34
EMRL1,2	4	4	5	5	5	5	5	5	5	4	5	5	5	5	5	5
EMRL2,3	2	2	2	2	3	3	3	3	3	2	2	2	3	3	3	3
EMRL0,2	14	15	15	15	16	17	17	18	18	16	17	18	18	19	20	19
EMRL1,3	3	3	3	3	4	4	4	4	4	3	3	3	4	4	4	4
EMRL0,3	10	11	11	11	12	12	12	13	13	11	12	13	13	13	14	14

Table 7: MRL and expected MRL results for the MEHWMA scheme