

降雨強度曲線の係数表

$$r = a / (t^n + b) \quad (\text{mm/hr})$$

t : 降雨の継続時間(分)

: 標準偏差

明治41年～平成19年(資料数: 100個)

山形

係数	確率年											
	200	100	80	70	50	30	20	10	8	5	3	2
n	0.94	0.91	0.91	0.90	0.90	0.88	0.86	0.84	0.84	0.81	0.78	0.76
a	4,703	3,675	3,554	3,307	3,142	2,608	2,191	1,721	1,634	1,246	911	695
b	19.3	16.0	16.0	14.9	15.1	13.2	11.6	10.2	10.3	8.3	6.7	5.8
	1.11	0.94	0.86	0.83	0.77	0.63	0.56	0.42	0.36	0.28	0.19	0.12

昭和32年～平成19年(資料数: 51個)

新庄

係数	確率年											
	200	100	80	70	50	30	20	10	8	5	3	2
n	0.72	0.72	0.71	0.71	0.72	0.72	0.70	0.71	0.71	0.69	0.69	0.69
a	1,979	1,785	1,632	1,598	1,591	1,450	1,206	1,091	1,032	815	687	575
b	7.5	7.3	6.7	6.7	7.1	6.9	5.8	6.0	5.9	4.8	4.5	4.3
	1.95	1.70	1.60	1.56	1.44	1.26	1.14	0.90	0.85	0.74	0.62	0.57

昭和12年～平成19年(資料数: 71個)

酒田

係数	確率年											
	200	100	80	70	50	30	20	10	8	5	3	2
n	0.80	0.79	0.78	0.78	0.77	0.75	0.74	0.73	0.72	0.71	0.70	0.70
a	3,340	2,853	2,615	2,556	2,294	1,885	1,654	1,348	1,213	1,014	812	681
b	16.4	14.5	13.3	13.1	11.9	9.8	8.7	7.3	6.5	5.5	4.4	3.8
	2.26	1.97	1.91	1.82	1.70	1.51	1.32	1.07	0.97	0.82	0.62	0.43

昭和25年～平成19年(H.1～H.5年欠測)(資料数: 53個)

米沢

係数	確率年											
	200	100	80	70	50	30	20	10	8	5	3	2
n	0.91	0.91	0.91	0.90	0.90	0.89	0.89	0.87	0.86	0.85	0.83	0.83
a	3,621	3,305	3,202	2,989	2,847	2,499	2,333	1,846	1,674	1,420	1,105	942
b	11.8	12.1	12.2	11.4	11.6	11.0	11.2	10.0	9.4	9.0	8.1	8.4
	2.58	2.14	1.99	1.95	1.74	1.44	1.24	0.89	0.79	0.58	0.36	0.23

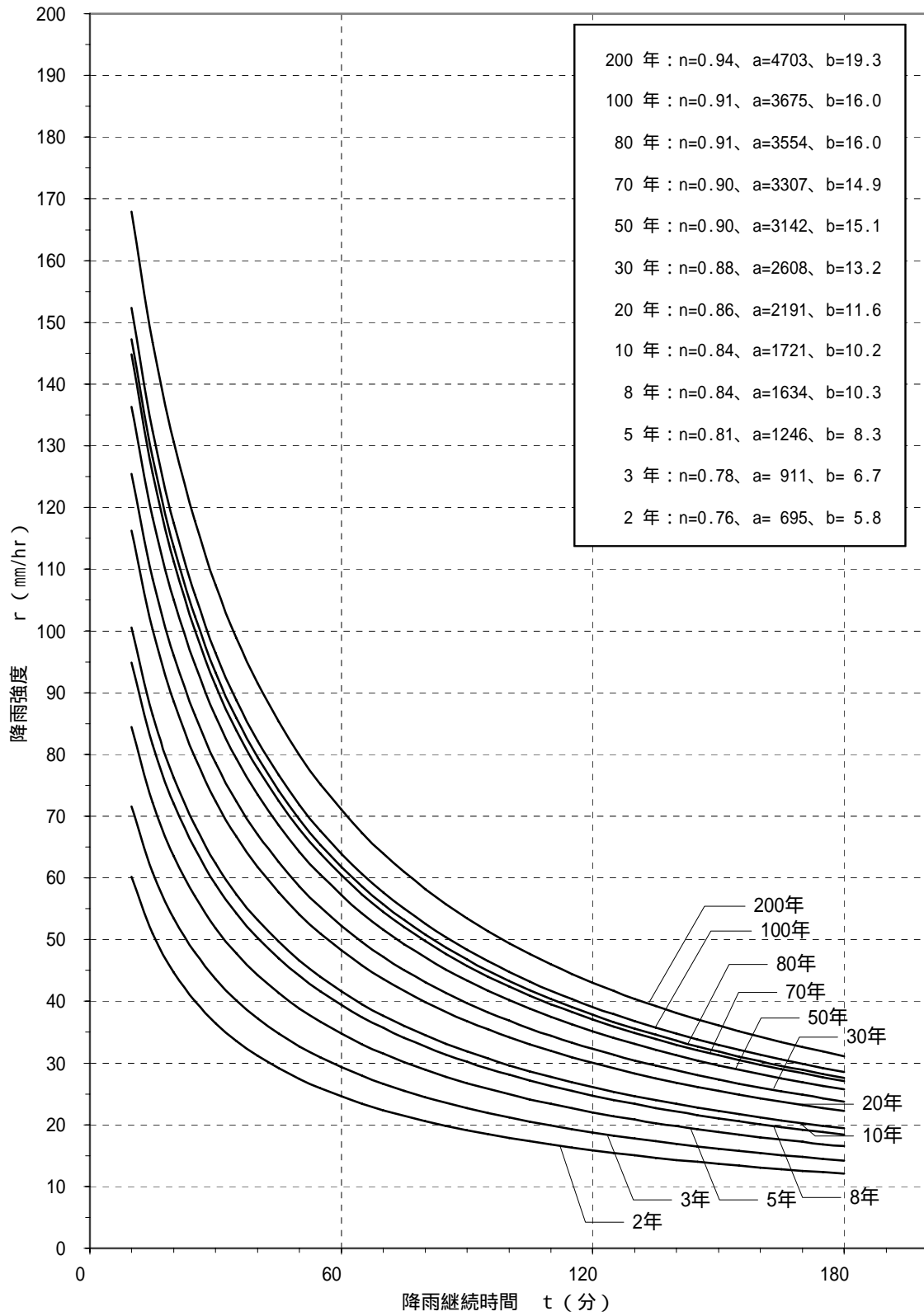
山形降雨強度表

明治41年～平成19年（資料数：100個）

降雨強度式の係数 $r = a / (t^n + b)$ (mm/hr)												
n	0.94	0.91	0.91	0.90	0.90	0.88	0.86	0.84	0.84	0.81	0.78	0.76
a	4,703	3,675	3,554	3,307	3,142	2,608	2,191	1,721	1,634	1,246	911	695
b	19.3	16.0	16.0	14.9	15.1	13.2	11.6	10.2	10.3	8.3	6.7	5.8
t (分)	確 率 年											
	200	100	80	70	50	30	20	10	8	5	3	2
10	167.9	152.3	147.3	144.8	136.4	125.5	116.3	100.5	94.9	84.4	71.6	60.2
15	146.7	132.4	128.0	125.5	118.4	108.5	100.2	86.4	81.6	72.2	60.9	51.0
20	130.6	117.5	113.6	111.3	105.0	96.0	88.5	76.2	72.0	63.5	53.4	44.7
25	117.8	105.9	102.4	100.2	94.6	86.4	79.6	68.5	64.7	57.0	47.9	40.1
30	107.5	96.5	93.3	91.2	86.2	78.7	72.5	62.3	59.0	51.9	43.6	36.5
35	98.9	88.7	85.8	83.9	79.3	72.4	66.6	57.3	54.3	47.7	40.1	33.6
40	91.6	82.2	79.5	77.7	73.5	67.1	61.8	53.2	50.3	44.3	37.2	31.2
45	85.3	76.6	74.1	72.4	68.5	62.5	57.6	49.6	47.0	41.4	34.8	29.1
50	79.9	71.8	69.5	67.9	64.2	58.6	54.1	46.6	44.1	38.8	32.7	27.4
55	75.2	67.6	65.4	63.9	60.5	55.3	51.0	43.9	41.6	36.7	30.9	25.9
60	71.0	63.9	61.8	60.4	57.2	52.3	48.2	41.6	39.4	34.7	29.3	24.6
65	67.3	60.6	58.6	57.3	54.2	49.6	45.8	39.5	37.5	33.0	27.9	23.4
70	63.9	57.6	55.7	54.5	51.6	47.2	43.6	37.7	35.7	31.5	26.6	22.4
75	60.9	55.0	53.2	52.0	49.2	45.1	41.7	36.0	34.1	30.2	25.5	21.4
80	58.2	52.6	50.8	49.7	47.1	43.1	39.9	34.5	32.7	28.9	24.5	20.6
85	55.7	50.4	48.7	47.6	45.1	41.3	38.3	33.1	31.4	27.8	23.5	19.8
90	53.4	48.3	46.7	45.7	43.3	39.7	36.8	31.9	30.2	26.8	22.7	19.1
95	51.4	46.5	45.0	44.0	41.7	38.2	35.4	30.7	29.1	25.8	21.9	18.5
100	49.4	44.8	43.3	42.4	40.2	36.9	34.2	29.6	28.1	24.9	21.2	17.9
105	47.6	43.2	41.8	40.9	38.8	35.6	33.0	28.7	27.2	24.1	20.5	17.3
110	46.0	41.7	40.4	39.5	37.5	34.4	32.0	27.7	26.3	23.4	19.9	16.8
115	44.4	40.4	39.0	38.3	36.3	33.3	31.0	26.9	25.5	22.7	19.3	16.3
120	43.0	39.1	37.8	37.1	35.1	32.3	30.0	26.1	24.7	22.0	18.8	15.9
125	41.7	37.9	36.7	35.9	34.1	31.3	29.1	25.3	24.0	21.4	18.3	15.4
130	40.4	36.8	35.6	34.9	33.1	30.4	28.3	24.6	23.4	20.8	17.8	15.0
135	39.2	35.7	34.6	33.9	32.1	29.6	27.5	24.0	22.7	20.3	17.3	14.7
140	38.1	34.8	33.6	33.0	31.3	28.8	26.8	23.4	22.1	19.8	16.9	14.3
145	37.1	33.8	32.7	32.1	30.4	28.0	26.1	22.8	21.6	19.3	16.5	14.0
150	36.1	32.9	31.9	31.3	29.6	27.3	25.5	22.2	21.1	18.8	16.1	13.7
155	35.1	32.1	31.1	30.5	28.9	26.7	24.9	21.7	20.6	18.4	15.8	13.4
160	34.3	31.3	30.3	29.7	28.2	26.0	24.3	21.2	20.1	18.0	15.4	13.1
165	33.4	30.6	29.6	29.0	27.5	25.4	23.7	20.7	19.6	17.6	15.1	12.8
170	32.6	29.9	28.9	28.4	26.9	24.8	23.2	20.3	19.2	17.2	14.8	12.6
175	31.8	29.2	28.2	27.7	26.3	24.3	22.7	19.8	18.8	16.9	14.5	12.3
180	31.1	28.5	27.6	27.1	25.7	23.8	22.2	19.4	18.4	16.5	14.2	12.1

山形降雨強度曲線
 (明治41年～平成19年(資料数:100個))

$$r = a / (t^n + b)$$



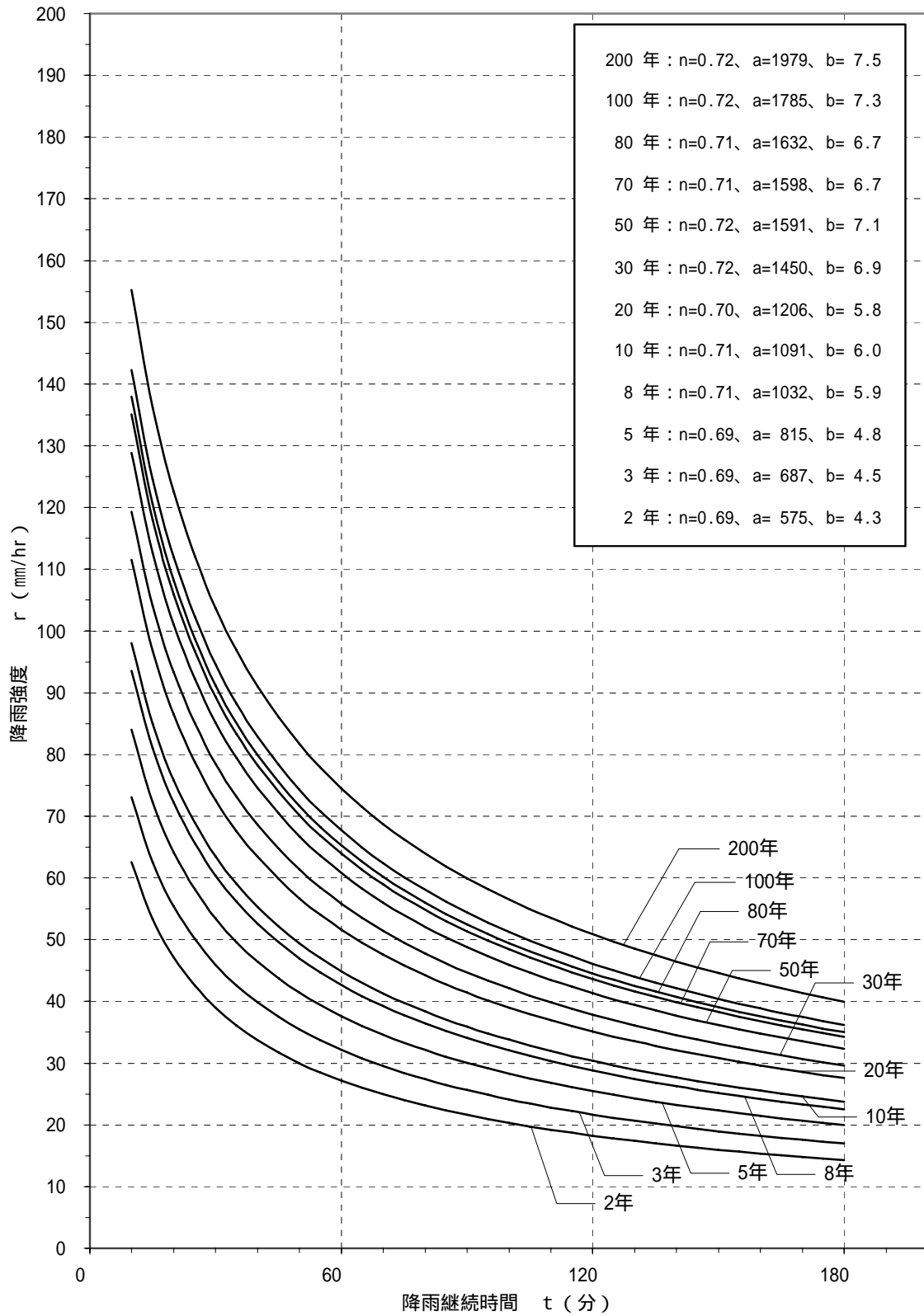
新庄降雨強度表

昭和32年～平成19年（資料数：51個）

降雨強度式の係数 $r = a / (t^n + b)$ (mm/hr)												
n	0.72	0.72	0.71	0.71	0.72	0.72	0.70	0.71	0.71	0.69	0.69	0.69
a	1,979	1,785	1,632	1,598	1,591	1,450	1,206	1,091	1,032	815	687	575
b	7.5	7.3	6.7	6.7	7.1	6.9	5.8	6.0	5.9	4.8	4.5	4.3
t (分)	確 率 年											
	200	100	80	70	50	30	20	10	8	5	3	2
10	155.2	142.3	138.0	135.1	128.8	119.4	111.5	98.0	93.6	84.0	73.1	62.5
15	136.2	124.6	120.5	118.0	112.6	104.1	96.8	85.0	81.0	72.3	62.6	53.3
20	122.6	112.0	108.2	105.9	101.1	93.3	86.5	75.8	72.2	64.2	55.4	47.1
25	112.1	102.3	98.7	96.7	92.2	85.0	78.7	68.9	65.6	58.1	50.1	42.5
30	103.7	94.6	91.2	89.3	85.2	78.5	72.6	63.5	60.4	53.4	45.9	39.0
35	96.8	88.2	85.1	83.3	79.4	73.1	67.6	59.0	56.1	49.6	42.6	36.1
40	91.0	82.9	79.9	78.2	74.6	68.6	63.4	55.3	52.6	46.4	39.8	33.7
45	86.0	78.3	75.5	73.9	70.4	64.7	59.8	52.2	49.6	43.8	37.5	31.7
50	81.7	74.3	71.6	70.2	66.8	61.4	56.7	49.4	47.0	41.4	35.5	30.0
55	77.9	70.8	68.3	66.8	63.6	58.4	54.0	47.0	44.7	39.4	33.7	28.5
60	74.5	67.7	65.3	63.9	60.8	55.8	51.6	44.9	42.6	37.6	32.2	27.2
65	71.5	64.9	62.6	61.3	58.3	53.5	49.5	43.0	40.8	36.0	30.8	26.0
70	68.7	62.4	60.2	58.9	56.0	51.4	47.5	41.3	39.2	34.6	29.5	24.9
75	66.2	60.1	58.0	56.8	54.0	49.5	45.8	39.8	37.7	33.3	28.4	24.0
80	63.9	58.0	56.0	54.8	52.1	47.8	44.2	38.3	36.4	32.1	27.4	23.1
85	61.8	56.1	54.2	53.0	50.3	46.2	42.7	37.1	35.2	31.1	26.5	22.3
90	59.9	54.4	52.5	51.4	48.8	44.7	41.4	35.9	34.1	30.1	25.6	21.6
95	58.1	52.7	50.9	49.8	47.3	43.4	40.2	34.8	33.0	29.2	24.8	20.9
100	56.5	51.2	49.5	48.4	45.9	42.1	39.0	33.8	32.0	28.3	24.1	20.3
105	54.9	49.8	48.1	47.1	44.7	40.9	37.9	32.8	31.2	27.5	23.4	19.8
110	53.5	48.5	46.8	45.9	43.5	39.8	36.9	32.0	30.3	26.8	22.8	19.2
115	52.1	47.3	45.7	44.7	42.4	38.8	36.0	31.1	29.5	26.1	22.2	18.7
120	50.9	46.1	44.5	43.6	41.3	37.9	35.1	30.4	28.8	25.5	21.7	18.3
125	49.7	45.0	43.5	42.6	40.3	36.9	34.3	29.6	28.1	24.9	21.2	17.8
130	48.5	44.0	42.5	41.6	39.4	36.1	33.5	28.9	27.5	24.3	20.7	17.4
135	47.5	43.0	41.6	40.7	38.5	35.3	32.8	28.3	26.8	23.8	20.2	17.0
140	46.5	42.1	40.7	39.9	37.7	34.5	32.1	27.7	26.3	23.2	19.8	16.6
145	45.5	41.2	39.9	39.0	36.9	33.8	31.4	27.1	25.7	22.8	19.4	16.3
150	44.6	40.4	39.1	38.3	36.2	33.1	30.8	26.6	25.2	22.3	19.0	16.0
155	43.7	39.6	38.3	37.5	35.5	32.5	30.2	26.0	24.7	21.9	18.6	15.6
160	42.9	38.9	37.6	36.8	34.8	31.8	29.6	25.5	24.2	21.5	18.2	15.3
165	42.1	38.1	36.9	36.1	34.1	31.3	29.1	25.1	23.8	21.1	17.9	15.1
170	41.4	37.5	36.2	35.5	33.5	30.7	28.6	24.6	23.3	20.7	17.6	14.8
175	40.6	36.8	35.6	34.9	32.9	30.1	28.1	24.2	22.9	20.3	17.3	14.5
180	39.9	36.2	35.0	34.3	32.4	29.6	27.6	23.8	22.5	20.0	17.0	14.3

新庄降雨強度曲線
 (昭和32年～平成19年(資料数: 51個))

$$r = a / (t^n + b)$$



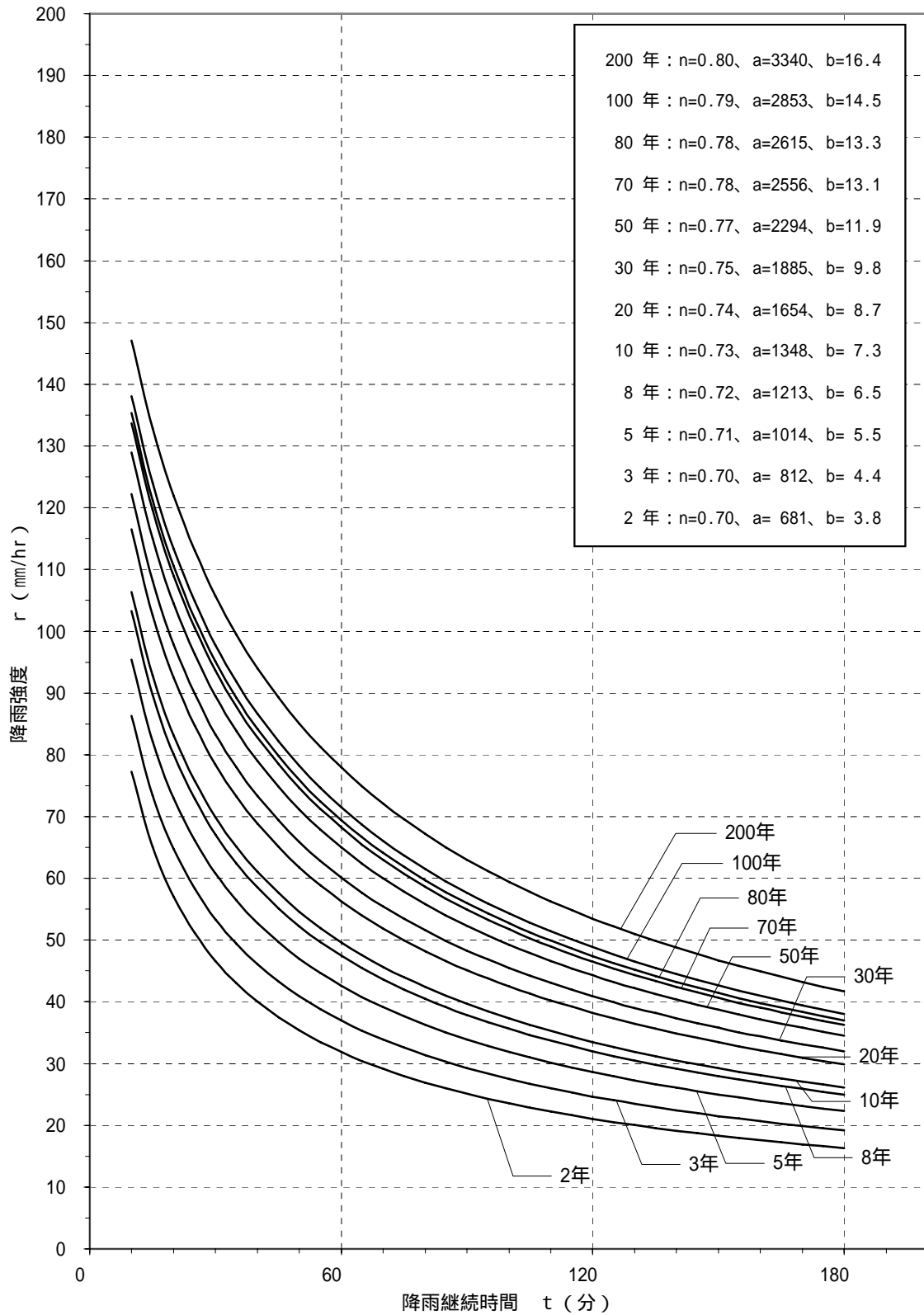
酒田降雨強度表

昭和12年～平成19年（資料数：71個）

降雨強度式の係数 $r = a / (t^n + b)$ (mm/hr)												
n	0.80	0.79	0.78	0.78	0.77	0.75	0.74	0.73	0.72	0.71	0.70	0.70
a	3,340	2,853	2,615	2,556	2,294	1,885	1,654	1,348	1,213	1,014	812	681
b	16.4	14.5	13.3	13.1	11.9	9.8	8.7	7.3	6.5	5.5	4.4	3.8
t (分)	確 率 年											
	200	100	80	70	50	30	20	10	8	5	3	2
10	147.1	138.1	135.3	133.6	129.0	122.2	116.5	106.4	103.3	95.4	86.3	77.3
15	132.9	124.1	121.2	119.6	115.0	108.2	102.6	92.8	89.7	82.2	73.4	65.1
20	122.0	113.4	110.6	109.0	104.6	97.9	92.5	83.2	80.1	73.0	64.7	57.0
25	113.1	104.8	102.1	100.6	96.3	89.8	84.7	75.8	72.8	66.1	58.3	51.1
30	105.7	97.7	95.1	93.6	89.5	83.3	78.4	69.9	67.1	60.8	53.4	46.6
35	99.4	91.8	89.2	87.8	83.9	77.9	73.2	65.1	62.4	56.4	49.4	43.0
40	94.0	86.6	84.2	82.8	79.0	73.3	68.8	61.1	58.5	52.7	46.1	40.0
45	89.3	82.1	79.8	78.5	74.8	69.4	65.1	57.6	55.1	49.7	43.3	37.5
50	85.1	78.2	75.9	74.6	71.2	65.9	61.8	54.6	52.2	47.0	40.9	35.4
55	81.3	74.7	72.5	71.2	67.9	62.8	58.9	52.0	49.7	44.7	38.8	33.5
60	77.9	71.5	69.4	68.2	65.0	60.1	56.3	49.6	47.4	42.6	37.0	31.9
65	74.9	68.7	66.6	65.5	62.4	57.7	54.0	47.5	45.4	40.8	35.3	30.4
70	72.1	66.1	64.1	63.0	60.0	55.4	51.9	45.6	43.6	39.1	33.9	29.1
75	69.5	63.7	61.8	60.7	57.8	53.4	50.0	43.9	42.0	37.6	32.6	28.0
80	67.2	61.5	59.7	58.6	55.8	51.6	48.2	42.4	40.5	36.3	31.4	26.9
85	65.0	59.5	57.7	56.7	54.0	49.9	46.6	41.0	39.1	35.0	30.3	26.0
90	63.0	57.7	55.9	54.9	52.3	48.3	45.1	39.6	37.9	33.9	29.3	25.1
95	61.2	55.9	54.3	53.3	50.7	46.9	43.8	38.4	36.7	32.9	28.4	24.3
100	59.4	54.3	52.7	51.7	49.3	45.5	42.5	37.3	35.6	31.9	27.5	23.5
105	57.8	52.8	51.3	50.3	47.9	44.2	41.3	36.3	34.6	31.0	26.7	22.9
110	56.3	51.4	49.9	49.0	46.6	43.1	40.2	35.3	33.7	30.1	26.0	22.2
115	54.8	50.1	48.6	47.7	45.4	42.0	39.2	34.4	32.8	29.4	25.3	21.6
120	53.5	48.8	47.4	46.5	44.3	40.9	38.2	33.5	32.0	28.6	24.7	21.1
125	52.2	47.7	46.3	45.4	43.2	40.0	37.3	32.7	31.2	27.9	24.0	20.5
130	51.0	46.6	45.2	44.3	42.2	39.0	36.5	31.9	30.5	27.3	23.5	20.0
135	49.8	45.5	44.2	43.3	41.3	38.2	35.6	31.2	29.8	26.6	22.9	19.6
140	48.8	44.5	43.2	42.4	40.4	37.3	34.9	30.5	29.2	26.1	22.4	19.1
145	47.7	43.6	42.3	41.5	39.5	36.5	34.1	29.9	28.5	25.5	22.0	18.7
150	46.7	42.7	41.4	40.6	38.7	35.8	33.4	29.3	28.0	25.0	21.5	18.3
155	45.8	41.8	40.6	39.8	37.9	35.1	32.8	28.7	27.4	24.5	21.1	18.0
160	44.9	41.0	39.8	39.0	37.2	34.4	32.1	28.1	26.9	24.0	20.7	17.6
165	44.0	40.2	39.1	38.3	36.5	33.8	31.5	27.6	26.4	23.6	20.3	17.3
170	43.2	39.5	38.3	37.6	35.8	33.1	31.0	27.1	25.9	23.1	19.9	16.9
175	42.4	38.7	37.6	36.9	35.2	32.5	30.4	26.6	25.4	22.7	19.5	16.6
180	41.7	38.0	37.0	36.2	34.5	32.0	29.9	26.1	25.0	22.3	19.2	16.3

酒田降雨強度曲線
 (昭和12年～平成19年(資料数: 71個))

$$r = a / (t^n + b)$$



米沢降雨強度表

昭和25年～平成19年（資料数：53個）

降雨強度式の係数 $r = a / (t^n + b)$ (mm/hr)												
n	0.91	0.91	0.91	0.90	0.90	0.89	0.89	0.87	0.86	0.85	0.83	0.83
a	3,621	3,305	3,202	2,989	2,847	2,499	2,333	1,846	1,674	1,420	1,105	942
b	11.8	12.1	12.2	11.4	11.6	11.0	11.2	10.0	9.4	9.0	8.1	8.4
t (分)	確 率 年											
	200	100	80	70	50	30	20	10	8	5	3	2
10	181.7	163.4	157.5	154.5	145.7	133.2	123.0	106.0	100.6	88.3	74.4	62.1
15	153.7	138.5	133.7	130.9	123.6	112.9	104.5	89.8	85.1	74.8	62.9	52.7
20	133.7	120.7	116.5	114.0	107.7	98.4	91.2	78.4	74.2	65.3	54.9	46.1
25	118.7	107.3	103.6	101.3	95.8	87.5	81.2	69.8	66.1	58.1	49.0	41.2
30	106.8	96.7	93.4	91.3	86.4	79.0	73.3	63.0	59.7	52.6	44.3	37.3
35	97.3	88.1	85.1	83.2	78.8	72.1	66.9	57.6	54.6	48.1	40.6	34.2
40	89.4	81.0	78.3	76.5	72.5	66.4	61.6	53.1	50.3	44.4	37.5	31.6
45	82.8	75.0	72.5	70.9	67.2	61.5	57.2	49.3	46.7	41.3	34.9	29.5
50	77.1	69.9	67.6	66.1	62.7	57.4	53.4	46.1	43.7	38.6	32.7	27.6
55	72.2	65.5	63.3	62.0	58.8	53.9	50.1	43.3	41.0	36.3	30.8	26.0
60	67.9	61.7	59.6	58.3	55.3	50.7	47.2	40.8	38.7	34.2	29.1	24.6
65	64.2	58.2	56.3	55.1	52.3	48.0	44.6	38.6	36.7	32.5	27.6	23.3
70	60.8	55.2	53.4	52.3	49.6	45.5	42.4	36.7	34.9	30.9	26.2	22.2
75	57.8	52.5	50.8	49.7	47.2	43.4	40.3	35.0	33.2	29.4	25.1	21.2
80	55.1	50.1	48.4	47.4	45.0	41.4	38.5	33.4	31.8	28.1	24.0	20.3
85	52.6	47.8	46.3	45.3	43.1	39.6	36.8	32.0	30.4	27.0	23.0	19.5
90	50.4	45.8	44.3	43.5	41.3	37.9	35.3	30.7	29.2	25.9	22.1	18.7
95	48.4	44.0	42.5	41.7	39.6	36.4	33.9	29.5	28.1	24.9	21.3	18.0
100	46.5	42.3	40.9	40.1	38.1	35.1	32.6	28.4	27.1	24.0	20.5	17.4
105	44.8	40.7	39.4	38.7	36.7	33.8	31.5	27.4	26.1	23.2	19.8	16.8
110	43.2	39.3	38.0	37.3	35.4	32.6	30.4	26.5	25.2	22.4	19.2	16.3
115	41.7	37.9	36.7	36.0	34.2	31.5	29.4	25.6	24.4	21.7	18.6	15.8
120	40.3	36.7	35.5	34.9	33.1	30.5	28.4	24.8	23.6	21.0	18.0	15.3
125	39.0	35.5	34.4	33.8	32.1	29.6	27.5	24.1	22.9	20.4	17.5	14.9
130	37.8	34.4	33.3	32.7	31.1	28.7	26.7	23.4	22.3	19.8	17.0	14.4
135	36.7	33.4	32.3	31.8	30.2	27.9	25.9	22.7	21.6	19.3	16.6	14.1
140	35.7	32.5	31.4	30.9	29.3	27.1	25.2	22.1	21.1	18.8	16.1	13.7
145	34.7	31.6	30.5	30.0	28.5	26.3	24.5	21.5	20.5	18.3	15.7	13.3
150	33.7	30.7	29.7	29.2	27.8	25.6	23.9	20.9	20.0	17.8	15.3	13.0
155	32.8	29.9	28.9	28.5	27.1	25.0	23.3	20.4	19.5	17.4	15.0	12.7
160	32.0	29.1	28.2	27.7	26.4	24.4	22.7	19.9	19.0	17.0	14.6	12.4
165	31.2	28.4	27.5	27.1	25.7	23.8	22.2	19.4	18.6	16.6	14.3	12.1
170	30.5	27.7	26.8	26.4	25.1	23.2	21.6	19.0	18.2	16.2	14.0	11.9
175	29.7	27.1	26.2	25.8	24.5	22.7	21.1	18.6	17.7	15.8	13.7	11.6
180	29.1	26.5	25.6	25.2	24.0	22.2	20.7	18.2	17.4	15.5	13.4	11.4

米沢降雨強度曲線
 (昭和25年～平成19年(資料数: 53個))

$$r = a / (t^n + b)$$

