

Na bazi premera dela sastojine crnog bora u Lipovici, površine $p = 0.1$ ha i poznate starosti od 55 godina, odrediti i analizirati sledeće elemente rasta i sastojinske izgrađenosti i po potrebi ih grafički predstaviti:

1. Srednje prečnike i visine; 2. Temeljnice i zapremine;

2.1. Temeljnice pojedinačnih stabla, dobijene izrazom $g = \frac{d^2 \cdot \pi}{40000}$, upisivati u tabelu koja je u sklopu ovog zadatka.

2.2. Na osnovu stepene funkcije, $h = 7.8963795 \cdot d^{0.2847859}$, pomoću koja smo izravnali vezu prečnika i visine nacrtati visinsku krivu na grafikonu iz prethodnog zadatka. Takođe, na osnovu dobijene visinske krive, odrediti i upisati visine na mestima gde nedostaju u tabeli premera iz prethodnog zadatka.

—	d [cm]	+	v [m^3]
9.5	10	10.49	$0.003321 + 0.0019551 \cdot h + 0.000212 \cdot h^2 - 0.000008449883 \cdot h^3$
10.5	11	11.49	$0.019433 - 0.00197 \cdot h + 0.000608 \cdot h^2 - 0.000018 \cdot h^3$
11.5	12	12.49	$-0.032979 + 0.013841 \cdot h - 0.000671 \cdot h^2 + 0.000015 \cdot h^3$
12.5	13	13.49	$-0.018609 + 0.012202 \cdot h - 0.000566 \cdot h^2 + 0.000015 \cdot h^3$
13.5	14	14.49	$-0.044235 + 0.019489 \cdot h - 0.001044 \cdot h^2 + 0.000026 \cdot h^3$
14.5	15	15.49	$-0.019722 + 0.014333 \cdot h - 0.000514 \cdot h^2 + 0.000012 \cdot h^3$
15.5	16	16.49	$-0.007571 + 0.012104 \cdot h - 0.000137 \cdot h^2$
16.5	17	17.49	$0.01 + 0.01 \cdot h$
17.5	18	18.49	$0.223156 - 0.059532 \cdot h + 0.008337 \cdot h^2 - 0.000414 \cdot h^3 + 0.000007327232 \cdot h^4$
18.5	19	19.49	$0.013912 + 0.012462 \cdot h$
19.5	20	20.49	$0.017538 + 0.01378 \cdot h$
20.5	21	21.49	$-0.044633 + 0.031277 \cdot h - 0.001271 \cdot h^2 + 0.000032 \cdot h^3$
21.5	22	22.49	$0.023077 + 0.016703 \cdot h$
22.5	23	23.49	$0.026154 + 0.018297 \cdot h$
23.5	24	24.49	$0.03 + 0.02 \cdot h$
24.5	25	25.49	$0.0338462 + 0.0213187 \cdot h$
25.5	26	26.49	$0.042582 + 0.022802 \cdot h$
26.5	27	27.49	$-0.110769 + 0.057962 \cdot h - 0.002315 \cdot h^2 + 0.000052 \cdot h^3$
27.5	28	28.49	$-0.010869 + 0.038017 \cdot h - 0.000767 \cdot h^2 + 0.000017 \cdot h^3$
28.5	29	29.49	$0.232198 - 0.012326 \cdot h + 0.002885 \cdot h^2 - 0.000064 \cdot h^3$
29.5	30	30.49	$0.156749 + 0.00896 \cdot h + 0.001426 \cdot h^2 - 0.000029 \cdot h^3$
30.5	31	31.49	$0.088979 + 0.024003 \cdot h + 0.000711 \cdot h^2 - 0.000018 \cdot h^3$
31.5	32	32.49	$0.025502 + 0.036402 \cdot h + 0.000158 \cdot h^2 - 0.000007331993 \cdot h^3$
32.5	33	33.49	$-0.046558 + 0.051162 \cdot h - 0.000499 \cdot h^2 + 0.000003351768 \cdot h^3$
33.5	34	34.49	$-0.149239 + 0.07371 \cdot h - 0.001758 \cdot h^2 + 0.000029 \cdot h^3$
34.5	35	35.49	$-0.148236 + 0.077322 \cdot h - 0.001863 \cdot h^2 + 0.000031 \cdot h^3$
35.5	36	36.49	$-0.084291 + 0.07077 \cdot h - 0.001462 \cdot h^2 + 0.000025 \cdot h^3$
36.5	37	37.49	$-0.124446 + 0.081256 \cdot h - 0.001933 \cdot h^2 + 0.000034 \cdot h^3$
37.5	38	38.49	$-0.232142 + 0.103519 \cdot h - 0.003053 \cdot h^2 + 0.000055 \cdot h^3$
38.5	39	39.49	$-0.029622 + 0.074514 \cdot h - 0.001407 \cdot h^2 + 0.000026 \cdot h^3$

Za određivanje zapremine po jednosantimetarskim debljinskim stepenima, prvo treba locirati kojem stepenu pripada stablo za koje sve vrši izračunavanje, a zatim u pripadajuću regresionu jednačinu zameniti nezavisnu promenljivu iznosom visine (h) u metrima.

2.3. Trenutni broj stabala iznosi $N/ha = n \cdot \frac{1ha}{p} =$

2.4. Trenutna temeljnica sastojine iznosi $G = \sum_1^n g \cdot \frac{1ha}{p} =$

2.5. Trenutna zapremina sastojine iznosi $V = \sum_1^n v \cdot \frac{1ha}{p} =$

n	g	v	$\frac{h}{d}$	r_s	b	l	$\frac{l}{h}$	$\frac{b}{h}$	$\frac{b}{l}$	$\frac{b}{d}$	Zp	N	G	V	n	g	v	$\frac{h}{d}$	r_s	b	l	$\frac{l}{h}$	$\frac{b}{h}$	$\frac{b}{l}$	$\frac{b}{d}$	Zp	N	G	V
1	0.05	0.5													45	0.03	0.31												
2	0.06	0.54													46	0.05	0.5		1.9	.			.		14.6	11.3	.	37.6	376
3	0.04	0.38		1.9	3.8			0.2		.	.	752	.	285.8	47	.	0.42	71	1.9	3.8	.	0.3	0.2	.	15	11.3	.	37.6	315.8
4	0.02	0.21													48	0.07	0.59	63	2.2	4.4	5.5	0.3	.	.	15	.	.	39.1	.
5	0.06	0.59		.	4.2			0.2		15.1	13.9	.	.	361.1	49	0.04	0.36	80			.	0.2							
6	0.08	0.87	.	2.4	4.8			.		14.9	.	470	37.6	408.9	50	/													
7	0.07	0.58	63												51	0.04	0.34												
8	0.04	0.34													52	.	0.24												
9	0.03	0.24													53	0.03	0.24												
10	0.03	0.24													54	0.02	0.21												
11	0.04	0.38													55	0.04	0.38												
12	0.04	0.34													56	/													
13	0.04	0.34													57	0.05	0.46												
14	0.06	0.59													58	.	0.69	.	2.7	.	.	0.3	.	.	17.8	.	371	26	256
15	0.07	0.64	63	.	4.8	.	0.3	.	.	.	.	.	32.9	300.8	59	.	0.5		1.9	.			.	.	11.3	752	37.6	376	
16	0.03	0.28													60	0.08	0.77	71	2.5	.	.	0.3	0.2	.	16.1	.	434	34.7	334.2
17	0.07	.	68	.	4.4			.		.	15.2	559	39.1	.	61	.	0.49	.	2	4	.	.	0.2	.	15.9	12.6	.	33.8	.
18	0.06	.	70	.	.	4.3	0.2	0.2	0.9	14.9	.	675	.	344.2	62	0.04	0.31		1.7	.			0.2		15.9	9.1	934	.	289.5
19	0.02	0.19	.			.	0.2								63	0.06	0.68	77	2.2	4.4	.	.	0.2	.	15.3	15.2	559	33.5	380.1
20	0.05	.		.	3.6			0.2		14.7	.	833	41.7	349.9	64	0.03	0.21												
21	0.04	0.38													65	0.05	.	82			6.5	0.3							
22	0.04	.													66	0.07	0.79	73	2.5	.	7.8	.	0.2	.	16.2	19.6	434	.	342.9
23	.	0.59		1.8	3.6			.		.	10.2	.	50	491.5	67	0.06	0.55	.	2.2	4.4	7.2	0.4	0.2	.	.	15.2	559	.	307.5
24	0.02	0.16													68	0.05	0.53	.			6.8	.							
25	0.03	0.27													69	0.07	0.63	68			6.8	.							
26	0.01	0.1													70	0.04	0.35	91			5.8	.							
27	0.03	0.27													71	0.03	0.29	.			.	.							
28	0.09	0.91	70	.	5.2			0.2		.	21.2	401	36.1	.	72	0.05	0.42	80	2.1	4.2	.	.	0.2	.	17.4	13.9	.	.	257
29	.	0.34													73	/													
30	0.11	1.18	65												74	0.04	0.4	78			6.2	0.3							
31	0.05	0.49	87			7.1	.								75	0.06	0.51	.											
32	0.05	0.46	89			6.5	0.3								76	.	1.1	66											
33	0.07	0.7	69			5.9	0.3								77	0.06	0.54												
34	.	.	.			3.6	0.2								78	/													
35	0.04	0.34													79	0.06	0.5												
36	0.05	.													80	0.02	0.19												
37	0.06	0.59													81	.	.	71	.	.			0.3		18.4	26.4	322	.	270.5
38	/														82	0.04	0.42												
39	0.03	0.22	85			3.8	0.2								83	0.04	0.38												
40	0.06	.		2.2	.			.		16.3	.	559	33.5	301.9	84	0.04	0.38												
41	0.05	.		.	3.8			0.2		15.2	11.3	752	.	.	85	0.07	0.6	65	2.5	5			.		17	19.6	434	30.4	.
42	0.05	0.5		.	5			0.3		19.5	19.6	.	21.7	.	86	0.03	0.28	.			6	.							
43	0.06	0.57	63	.	4.8			0.3		.	.	.	28.2	.	87	0.04	0.38		1.8	3.6			0.2		.	10.2	833	.	.
44	0.05	0.45		2.1	.			0.2		.	13.9	612	30.6	.															