LIGHT SPECTRUM OF SPT-ATON PLASMA JET.

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Abstract

The spectral composition of plasma radiation in spectral range 350 -850 nm of truster ATON plasma jet is represented for two operation modes of thruster: $\dot{m}_A$= 3mg/s, $\dot{m}_C$= 0.4mg/s, U_d =300V, U_d = 350V and at three cross sections: near the outlet, at 50 mm from the outlet,at 100 mm from the outlet.The spectral intensities were measured for the same cases.The general pattern of spectrum remains constant for all cross sections: neither line disappears and neither new line appears. Only the decrease of intensity, when moving off the outlet,for absolute majority of lines,takes place.When the discharge voltage varies,the intensity of majority of lines changes weakly.But the behavior of intensity of several lines has specific details. The total intensity decreases, when the discharge voltage increases.

The purpose of this cycle of investigations was determination of spectral composition of plasma radiation in spectral range 350-850 nm at various cross sections of truster ATON plasma jet. The photoelectric registration of spectrum in the direction,orthogonal to the direction of plasma jet propagation, was used.The chart of experimental device is shown on fig.1. Plasma jet emission (3), passing through quartz window (4), was focused on inlet slit of МДР-23 monochromator (6), the photomultiplier ФЭУ-100 (7) was installed at the outlet of monochromator, the signal from which came to microampermeter (8).The diffractive lattice with 1200 lines per mm was used for registration in all investigation range.

The ФЭУ-100 spectral sensitivity region is between 170 nm and 880 nm, with maximum at 420-460 nm. In order to cut off the second-order spectra, which are applied on investigated spectrum, the wind-band filter was used. The width of inlet and outlet slits was set equal 0.1 mm. The reverse linear dispersion of monochromator was 1.3nm/mm.

The spectral intensities were measured at different cross sections:near the outlet (Z=0;I0, when Vd=300 V and I1 when Vd=350 V), at 50 mm from the outlet(Z=50 mm; I2 for Vd=300 V, I3 for Vd=350V) at 100 mm from the outlet (Z=100 mm; I4 for Vd=300 V, I5 for Vd=350 V). The absolute spectral intensities with corresponding transitions are represented in table 1.One may note,when analyzing the obtained results,that the measurement at long wave boundary of ~~of~~ our range,when λ> 650 nm,have low precision, since the spectral sensitivity of used photomultiplier in this range is low.

One may note,when analyzing the spectral composition of plasma radiation XeI, XeII and XeIII, that the general pattern of spectrum remains constant for all cross sections:neither line disappears and neither new line appear.Only the decrease of intensity, when moving off the outlet,for absolute majority of lines, takes place. The typical dependence of XeI, XeII, XeIII lines intensity on distance is represented on fig. When the discharge voltage varies, the intensity of majority of lines changes weakly.Moreover, the great number of lines exists, for which the intensity at each cross section coincides (for example, lines λ = 828.0, 882.7, 892.2, 410.1, 4[illegible].0, 448.0, 452.4, 454.[illegible] nm). But the behavior of

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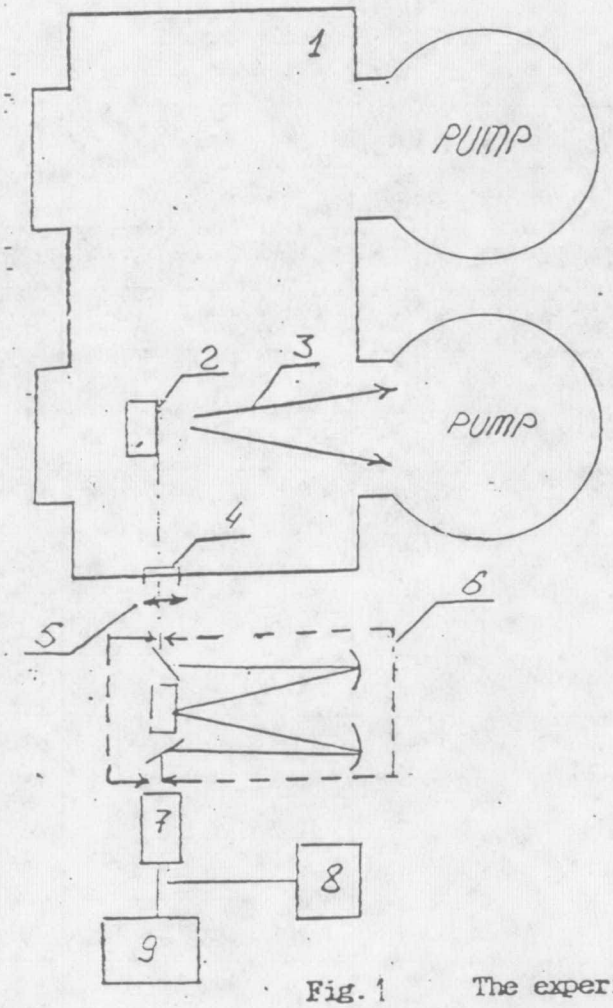
intensity of several lines has specific details. That is, the intensity of XeII 625.6 nm line has maximum at some distance from the outlet, it is shown on fig.2. In addition, one may note, that the intensity of lines 672.8, 605.1, 680.5 nm decrease sufficiently slower, when moving off the outlet. The most intensive flux for XeI is for occupation the metastable level 8.31 eV (467.1nm, $I0=17W/m^3$), and resonant level 8.44 eV (461.1, $I0=13.26\ W/m^3$). The integral power of plasma jet radiation may be obtained by summation of intensities for all lines in given cross section. The result is given on fig.3. It is seen, that the regimes Vd= 300 V and Vd=350V have the same character, differing no more then 2% of absolute value, the total intensity decreases, when the discharge voltage increases.



1 - vacuum chamber;
2 - model A-4;
3 - plasma beam;
4 - quartz window;
5 - quartz condenser;
6 - monochromator МДР-23;
7 - photoreceiver;
8 - microampermeter;
9 - ФЭУ power source;

Fig. 1 The experimental stand diagram.

Absolute spectral intencities of model A-4 plasma radiation lines in band of 350 - 850 nm

Table 1

Wave length, A		I0, W/m	I1, W/m	I2, W/m	I3, W/m	I4, W/m	I5, W/m
		Transition					
1	2	3	4	5	6	7	8
3780	XeIII	0.4023	0.4023	0.0670	0.0670	0.05365	0.05365
		$6s^3S^0$ (15.57 eV) - 6p P (18.85 eV)					
3877	XeIII	1.045	1.045	0.1306	0.1306	0.1632	0.1632
		$6s'^3D^0_3$ (17.19 eV) - $6p'^1F_3$ (20.38 eV)					
3922	XeIII	0.5749	0.5749	0.1277	0.1277	0.1277	0.1277
		$6s^5S^0_2$ (15.06 eV) - $6p^5P_2$ (18.22 eV)					
3950	XeIII	1.132	1.321	0.3145	0.3145	0.1258	0.1258
		$6s^5S^0_2$ (15.06 eV) - $6p^5P_1$ (18.20 eV)					
3967	XeI	1.308	1.246	0.3426	0.3426	0.1246	0.1246
		$6s[3/2]^0_2$(8.31eV) - $8p[5/2]_3$(11.44eV)					
4050	XeIII	1.187	1.128	0.3562	0.3265	0.2375	0.2375
		$6s^3S^0_1$[15.57eV) - $6p^3P_1$ (18.63eV)					
4145	XeIII	0.6792	0.6226	0.1698	0.1132	0.0849	0.0849
		$5d'^3D^0_1$(17.13eV) - $6p'^3D_2$(20.12eV)					
4180	XeII	2.011	1.955	0.6145	0.5866	0.3631	0.3631
		$6p^4\ D^0[3/2]$(13.85eV) - $6d^4D[3/2]$(16.82eV)					
4193	XeI	2.17	2.17	0.6398	0.6398	0.3616	0.3338
		$6s[3/2]^0_2$(8.31eV) - $4f[5/2]_2$ (11.27eV)					
4208	XeII	4.987	4.71	1.191	1,274	0.7204	0.6649
		$6d^4\ P^0[3/2]$ (13.85eV) - $6d^4D[5/2]$ (16.80eV)					
4213	XeII	4.981	4.981	1.273	1.384	0.8302	0.8302
		$6p^4D^0[1/2]$(14.91eV) - $6d^4P[3/2]$(17.86eV)					
4216	XeIII	5.254	4.978	1.327	1.327	0.8296	0.8296
		$5d'^3F^0_2$ (15.91eV) - $6p^3P_2$ (18.85 eV)					

1	2	3	4	5	6	7	8
4223	XeII	3.479	3.59	0.6627	0.6627	0.497	0.4694
		$6p\,^2P^o[3/2](15.27eV) - 7s'\,14[5/2]\,(18.21eV)$					
4238	XeII	6.059	6.059	1.983	1.983	1.322	1.267
		$6p\,^4P^o\,[5/2](13.87eV) - 6d\,^4D\,[5/2]\,(16.80eV)$					
4245	XeII	6.604	6.053	2.201	2.201	1.376	1.321
		$6p\,^4P^o[5/2](13.87eV) - 6d\,^4D[7/2]\,(16.79eV)$					
4296	XeII	2.362	2.307	1.703	1.703	0.8241	0.7691
		$6p\,^4P^o[3/2](13.85eV) - 7s\,^4P[1/2]\,(16.74eV)$					
4310	XeII	2.75	2.75	1.98	1.98	0.9899	0.9899
		$6p\,^2D^o[5/2](15.25eV) - 7s'\,^2D[5/2]\,(18.13eV)$					
4330	XeII	5.512	5.237	1.764	1.764	0.9922	0.9922
		$6p\,^4D^o[5/2](14.06eV) - 6d\,^4F[7/2]\,(16.93eV)$					
4393	XeII	4.19	4.134	1.145	1.145	0.7263	0.6984
		$6p\,^4S^o[3/2](15.07eV) - 6d\,^2D[5/2]\,(17.90eV)$					
4395	XeII	3.69	3.69	1.118	1.118	0.6988	0.6708
		$5d'\,^2F[5/2]\,(14.21eV) - 4f'\,^2F^o[7/2]\,(17.04eV)$					
4462	XeII	6.853	6.568	1.942	1.942	1.314	1.256
		—					
4480	XeII	1.609	1.609	0.3449	0.3449	0.1724	0.1724
		$6p\,^4D^o[3/2](14.47eV) - 6d\,^4F[5/2]\,(17.24eV)$					
4501	XeI	2.027	2.027	0.5212	0.5212	0.2606	0.2317
		$6s[3/2]^o_2\,(8.31eV) - 6p'[1/2]_1\,(11.07eV)$					
4524	XeI	5.84	5.84	1.402	1.402	0.9344	0.9344
		$6s[3/2]^o_2\,(8.31eV) - 6p'[3/2]_2\,(11.05eV)$					
4540	XeII	4.993	4.993	1.234	1.234	1.087	1.057
		$6p\,^2D^o[3/2](15.39eV) - 7s'\,^2D[5/2]\,(18.13eV)$					
4545	XeII	2.53	2.53	0.765	0.765	0.7061	0.7061
		$6p\,^4D^o[5/2](14.06eV) - 6d\,^4D[7/2]\,(16.79eV)$					

1	2	3	4	5	6	7	8
4577	XeII	4.167	4.167	1.22	1.22	0.9822	0.9822
		$6p\,^4D^o[7/2](14.08eV) - 6d\,^4D[5/2]\ (16.79eV)$					
4582	XeI	4.174	4.174	1.342	1.342	1.014	0.9542
		$6s\,[3/2]^o_1\ (8.44eV) - 6p'[1/2]_0\ (11.14eV)$					
4585	XeII	4.776	4.477	1.373	1.373	1.015	0.9552
		$6p\,^4D^o[7/2]\ (14.08eV) - 6d\,^4D[7/2](16.79eV)$					
4592	XeII	9.875	9.875	2.873	2.394	1.047	1.017
		$6p\,^4S^o[3/2]\ (15.07eV) - 6d\,^4P[5/2]\ (17.77eV)$					
4603	XeII	12.02	11.42	2.674	2.674	1.742	1.742
		$6s\,^4P[3/2]\ (11.77eV) - 6p\,^4D^o[3/2](14.47eV)$					
4611	XeI	13.26	12.05	2.41	1.928	1.085	1.085
		$6s[3/2]^o_2(8.31eV) - 7p[3/2]_1\ (11.00eV)$					
4624	XeI	7.87	7.87	0.2542	2.179	1.816	1.756
		$6s[3/2]^o_2\ (8.31eV) - 7p[3/2]_2\ (10.99eV)$					
4671	XeI	17.85	17.23	5.539	4.924	3.816	3.693
		$6s\,[3/2]^o_2\ (8.31eV) - 7p[5/2]_3(10.97eV)$					
4697	XeI	4.347	4.223	1.366	1.273	0.9315	0.9315
		$6s\,[3/2]^o_2\ (8.31eV) - 7p[5/2]_2\ (10.95eV)$					
4698	XeII	3.851	3.789	1.367	1.273	0.9318	0.9318
		$6p\,^4D^o[3/2]\ (14.47eV) - 4s\quad 12[3/2](17.11eV)$					
4734	XeI	3.144	3.081	0.9747	0.9432	0.6917	0.6603
		$6s[3/2]^o_1(8.44eV) - 6p'[3/2]_2\ (11.05eV)$					
4792	XeI	2.564	2.564	1.025	0.8973	0.5768	0.5768
		$6s[3/2]^o_2(8.31eV) - 7p[3/2]_1\ (10.90eV)$					
4807	XeI	5.152	5.152	2.318	2.576	1.224	1.159
		$6s[3/2]^o_1(8.44eV) - 7p[1/2]_0\ (11.01eV)$					
4829	XeI	4.54	4.54	1.492	1.394	1.005	0.9728
		$6s[3/2]^o_1(8.44eV) - 7p[3/2]_1\ (11.00eV)$					

1	2	3	4	5	6	7	8
4843	XeI	35.83	35.18	20.2	17.92	11.4	9.772
		$6s[3/2]_1^o$(8.44eV) - $7p[3/2]_2$ (10.97 eV)					
4844	XeII	39.1	39.1	20.2	14.99	11.4	9.775
		$6s\,^4P[5/2]$ (11.53eV) - $6p\,^4D[7/2]$ (14.09eV)					
4862	XeII	4.916	4.851	1.966	2.95	1.245	1.245
		$6p\,^4P^o[5/2]$ (13.87eV) - $7s\,^4P[5/2]$ (16.42eV)					
4876	XeII	15.8	15.14	6.255	4.609	3.622	4.082
		$5d\,^2D[5/2]$ (13.56eV) - $6p'\,^2F^o[7/2]$ (16.11eV)					
4883	XeII	23.76	23.1	6.93	6.6	5.082	4.95
		$6s\,^4P[1/2]$ (12.53eV) - $6p\,^4S^o[3/2]$ (15.07 eV)					
4887	XeII	10.57	11.23	3.767	3.701	2.577	2.577
		$6s\,^2P[3/2]$ (12.73eV) - $6p\,^2P^o[3/2]$ (15.27eV)					
4890	XeII	10.91	10.91	2.911	3.77	2.481	2.381
		$6s\,^4P[5/2]$ (11.53eV) - $6p\,^4D^o[5/2]$ (14.07eV)					
4916	XeI	18.01	17.35	7.006	5.671	4.47	4.337
		$6s[3/2]_1^o$ (8.44eV) - $6p'[3/2]_1$ (10.96eV)					
4921	XeII	18.71	18.05	6.683	5.347	4.344	4.344
		$6s\,^2P[3/2]$ (12.74eV) - $6p\,^2D^o[5/2]$ (15.26eV)					
4923	XeI	19.4	18.73	6.688	5.685	4.514	4.414
		$6s[3/2]_1^o$ (8.44eV) - $7p[5/2]_2$ (10.95eV)					
4972	XeII	6.123	5.783	1.225	1.225	0.6804	0.6804
		$5d\,^2D[5/2]$ (13.57eV) - $6p'\,^2P^o[3/2]$ (16.07eV)					
5028	XeI	1.738	1.738	0.6951	0.7646	0.417	0.417
		$6s[3/2]_1^o$ (8.44eV) - $7p[1/2]_1$ (10.90eV)					
5080	XeII	2.273	2.237	0.9588	1.065	0.7812	0.7457
		$6p\,^4D^o[5/2]$ (14.07eV) - $7s\,^4P[3/2]$ (16.51eV)					
5191	XeII	5.217	5.142	1.789	1.863	1.267	1.267
		$6s\,^4P[1/2]$ (12.53eV) - $6p\,^4D^o[1/2]$ (14.92eV)					

1	2	3	4	5	6	7	8
5260	XeII	6.136	5.829	1.917	1.917	1.227	1.304
		$6s^2\,P[1/2]$ (12.91eV) - $6p^2\,P^o[3/2]$ (15.27eV)					
5261	XeII	6.138	5.831	1.918	1.918	1.228	1.228
		$6s'^2D[3/2]$ (13.99eV) - $6p'^2D^o[3/2]$ (16.35eV)					
5292	XeII	42.71	41.94	19.41	17.08	10.48	9.707
		$6s^4\,P[5/2]$ (11.54eV) - $6p^4\,P^o[5/2]$ (13.89eV)					
5309	XeII	5.471	5.471	1.798	1.641	1.212	1.212
		$6s^2\,P[3/2]$ (12.73eV) - $6p^4S^o[3/2]$ (15.07eV)					
5313	XeII	5.323	5.245	1.8	1.8	1.252	1.252
		$6p^4D^o[7/2]$ (14.08eV) - $7s^4\,P[5/2]$ (16.42eV)					
5339	XeII	7.905	7.51	3.557	3.794	2.411	2.372
		$\{6p^4D^o[3/2]$ (14.46eV) - $6d^4D[5/2]$ (16.78eV) $\{6s^4P[5/2]$ (11.53eV) - $6p^4P^o[3/2]$ (13.85eV)					
5372	XeII	6.004	6.004	1.921	2.081	1.281	1.281
		$6s^4P[3/2]$ (11.79eV) - $6p^4P^o[1/2]$ (14.08eV)					
5419	XeII	37.51	36.7	17.94	15.49	8.563	8.155
		$6s^4P[3/2]$ (11.80eV) - $6p^4D^o[5/2]$ (14.09eV)					
5438	XeII	3.699	3.617	1.48	1.562	0.9865	0.9865
		$6s^2P[3/2]$ (12.74eV) - $6p^2S^o[1/2]$ (15.02eV)					
5460	XeII	3.486	3.486	1.826	1.743	1.287	1.245
		$5d^4D[5/2]$ (11.82eV) - $6p^4D^o[7/2]$ (14.09eV)					
5472	XeII	6.26	6.176	3.005	2.587	1.836	1.669
		$5d^4D[7/2]$ (11.82eV) - $6p^4D^o[7/2]$ (14.09eV)					
5531	XeII	5.592	5.592	2.71	2.495	1.204	1.204
		$5d^4D[7/2]$ (11.84eV) - $6p^4D^o[5/2]$ (14.09eV)					
5616	XeII	1.992	2.082	0.9959	0.9959	0.4527	0.4527
		$5d^2D[3/2]$ (13.05eV) - $6p^2D^o[5/2]$ (15.26eV)					
5659	XeII	3.535	3.721	1.209	1.209	0.5582	0.5582
		$5d^2P[1/2]$ (13.25eV) - $6p^2P^o[1/2]$ (15.44eV)					

1	2	3	4	5	6	7	8
5667	XeII	2.898	2.805	1.075	1.075	0.4675	0.4675
		$5d\,^4D[3/2](11.90eV) - 6p\,^4P^o[1/2](14.09eV)$					
5727	XeII	7.753	7.753	2.907	2.81	1.357	1.357
		$5d'\,^2F[5/2](14.21eV) - 6p'\,^2D^o[5/2](16.38eV)$ $6p\,^4P^o[3/2](13.85eV) - 5d'\,^2S[1/2](16.02eV)$					
5751	XeII	4.717	3.931	1.867	1.671	0.737	0.737
		$5d\,^4P[1/2](13.25eV) - 6p\,^2D^o[3/2](15.41eV)$					
5776	XeII	1.394	1.195	0.647	0.4977	0.1991	0.2489
		$5d\,^2P[1/2](13.12eV) - 6p\,^2P^o[3/2](15.27eV)$					
5823	XeI	2.137	2.137	1.018	1.119	0.407	0.5088
		$6s'[1/2]^o_0(9.45eV) - 5f[3/2]_1(11.57eV)$					
5824	XeI	2.138	2.748	1.069	1.12	0.4581	0.509
		$6p[5/2]_2(9.69eV) - 9d[7/2]^o_3(11.81eV)$					
5893	XeII	3.144	3.039	1.52	2.201	0.8384	0.8384
		$5d'\,^2D[5/2](13.96eV) - 6p'\,^2P^o[3/2](16.07eV)$ $6p'\,^2F^o[7/2](16.10eV) - 7s'\,^2D\,14[5/2](18.21eV)$					
5895	XeI	3.252	3.671	1.678	2.255	0.944	0.9964
		$6p[1/2]_1(9.58eV) - 8d[1/2]^o_1(11.68eV)$					
5945	XeII	1.071	1.179	0.6964	0.5893	0.3214	0.3214
		$5d\,^4D[1/2](12.00eV) - 6p\,^4P^o[1/2](14.09eV)$					
5971	XeII	4.446	3.795	2.006	2.114	1.03	1.193
		$6s'\,^2D[3/2](13.99eV) - 6p'\,^2P^o[3/2](16.07eV)$					
5976	XeII	4.891	3.913	1.902	2.065	1.033	1.087
		$6s\,^4P[3/2](11.77eV) - 6p\,^4P^o[3/2](13.85eV)$					
6036	XeII	3.928	3.142	2.469	2.244	1.122	1.122
		$5d\,^4D[5/2](11.82eV) - 6p\,^4P^o[5/2](13.88eV)$					
6051	XeII	7.021	5.096	4.303	3.793	1.925	1.925
		$5d\,^4D[7/2](11.83eV) - 6p\,^4P^o[5/2](13.88eV)$					
6093	XeII	4.072	3.491	1.978	1.978	0.9308	0.9308
		$6p\,^4D^o[3/2](14.46eV) - 7s\,^4P[3/2](16.50eV)$					

1	2	3	4	5	6	7	8
6097	XeII	3.967	3.15	1.867	1.983	0.8167	0.875
		$5d\,^4D[5/2]$ (11.81eV) - $6p\,^4P^o[3/2]$ (13.85eV)					
6101	XeII	4.679	4.095	2.164	2.223	0.9359	0.9359
		$5d\,^2D[3/2]$ (13.37eV) - $6p\,^2D^o[3/2]$ (15.40eV)					
6178	XeI	4.95	5.074	2.413	2.166	0.8663	0.9282
		$6s'[1/2]_1^o$ (9.57eV) - $5f[3/2]_2$ (11.58eV)					
6179	XeI	5.078	5.078	2.415	2.167	0.867	0.9289
		$6s'[1/2]_1^o$ (9.57eV) - $5f[3/2]_1$ (11.57eV)					
6182	XeI	4.965	5.462	2.483	2.234	0.931	1.117
		$6p[5/2]_2$ (9.69eV) - $8d[7/2]_3^o$ (11.69eV)					
6194	XeII	2.506	2.756	1.253	1.19	0.5012	0.5012
		$6s''\,^2S[1/2]$ (15.38eV) - $4f\,17^o[1/2]$ (17.38eV)					
6270	XeII	6.653	5.322	1.064	3.193	1.597	1.597
		$6s'\,^2D[3/2]$ (13.99eV) - $6p'\,^2F^o[5/2]$ (15.97eV)					
6277	XeII	5.352	6.556	2.475	3.479	1.739	1.739
		$5d\,^4D[3/2]$ (11.90eV) - $6p\,^4P^o[5/2]$ (13.88eV)					
6300	XeII	1.635	1.771	0.8175	0.6132	0.4088	0.4769
		$5d\,^2P[3/2]$ (13.05eV) - $6p\,^2S^o[1/2]$ (15.02eV)					
6318	XeI	3.87	4.146	2.073	1.797	0.9674	0.9674
		$6p[5/2]_3$ (9.72eV) - $8d[7/2]_4^o$ (11.68eV)					
6344	XeII	1.269	1.41	0.7757	0.7051	0.4231	0.4936
		$5d\,^4D[3/2]$ (11.90eV) - $6p\,^4P^o[3/2]$ (13.86eV)					
6356	XeII	1.423	1.566	1.423	2.42	0.7117	0.854
		$6p\,^2D^o[3/2]$ (15.40eV) - $4f'\,^2F^o\,11^o[5/2]$ (17.35eV)					
6469	XeI	2.776	2.776	1.619	1.465	0.7711	0.694
		$6p[1/2]_1$ (9.58eV) - $7d[3/2]_2^o$ (11.50eV)					
6472	XeI	2.704	2.704	1.622	1.313	0.8498	0.6953
		$6p[1/2]_1$ (9.58eV) - $7d[3/2]_1^o$ (11.49eV)					

1	2	3	4	5	6	7	8
6487	XeI	1.014	1.092	0.7017	0.5458	0.1871	0.2339
		$6p[1/2]_1$ (9.58eV) – $7d[5/2]^o_2$ (11.49eV)					
6504	XeI	3.623	3.465	1.26	1.103	0.63	0.63
		$6s'[1/2]^o_1$ (9.57eV) – $7d[3/2]^o_1$ (11.48eV)					
6512	XeII	1.582	1.266	0.3955	0.3164	0.2373	0.2373
		$5d\,^2D[3/2]$ (13.36eV) – $6p\,^2P^o[3/2]$ (15.27eV)					
6595	XeII	5.119	4.789	2.972	2.477	0.9908	0.9908
		—					
6597	XeII	5.455	4.876	3.223	2.645	1.074	1.074
		$5d\,^4P[5/2]$ (13.19eV) – $6p\,^4S^o[3/2]$ (15.07eV)					
6668	XeI	2.235	2.235	1.203	0.9456	0.6017	0.6017
		$6p[1/2]_1$ (9.58eV) – $7d[1/2]^o_0$ (11.44eV)					
6694	XeII	0.6997	1.05	0.1749	0.1749	0.105	0.105
		$5d\,^4D[1/2]$ (12.00eV) – $6p\,^4P^o[3/2]$ (13.85eV)					
6728	XeI	3.413	3.413	3.234	2.874	1.258	1.258
		{ $6p[1/2]_1$ (9.58eV) – $7d[1/2]^o_1$ (11.42eV) $5d[3/2]^o_2$ (9.96eV) – $10p[5/2]_2$ (11.80eV)					
6805	XeII	1.562	1.367	1.171	0.9762	0.4881	0.4881
		$5d\,^4F[7/2]$ (12.25eV) – $6p\,^4D^o[5/2]$ (14.07eV)					
6827	XeI	1.206	1.206	0.4021	0.4021	0.2011	0.2011
		$6s'[1/2]^o_0$ (9.45eV) – $4f[3/2]_1$ (11.26eV)					
6872	XeI	4.939	5.369	1.718	1.503	0.859	0.859
		—					
6882	XeI	4.362	4.362	2.508	1.963	1.09	0.9814
		$6p[5/2]_2$ (9.69 eV) – $7d[7/2]^o_3$ (11.49eV)					
6942	XeII	0.7197	0.9595	0.3598	0.3119	0.1919	0.1919
		—					
6976	XeI	1.012	1.265	0.5058	0.3794	0.2529	0.2529
		$6p[5/2]_3$ (9.72 eV) – $7d[5/2]^o_3$ (11.50 eV)					

1	2	3	4	5	6	7	8
6990	XeII	4.131	3.873	4.131	3.357	1.549	1.42
		$5d\,^4F\,[9/2]$ (12.31eV) - $6p\,^4D^o\,[7/2]$ (14.09eV)					
7119	XeI	6.261	6.857	3.876	2.087	1.342	1.342
		$6p[5/2]_3$ (9.72eV) - $7d\,[7/2]^o_4$ (11.46 eV)					
7164	XeII	1.232	1.232	0.6161	0.4621	0.3389	0.3081
		$5d'\,^2F[7/2]$ (14.24eV) - $6p'\,^2F^o[5/2]$ (15.97eV)					
8231	XeI	9.132	9.132	3.653	1.826	1.461	1.278
		$6s\,[3/2]^o_2$ (8.31eV) - $6p[3/2]_2$ (9.82eV)					

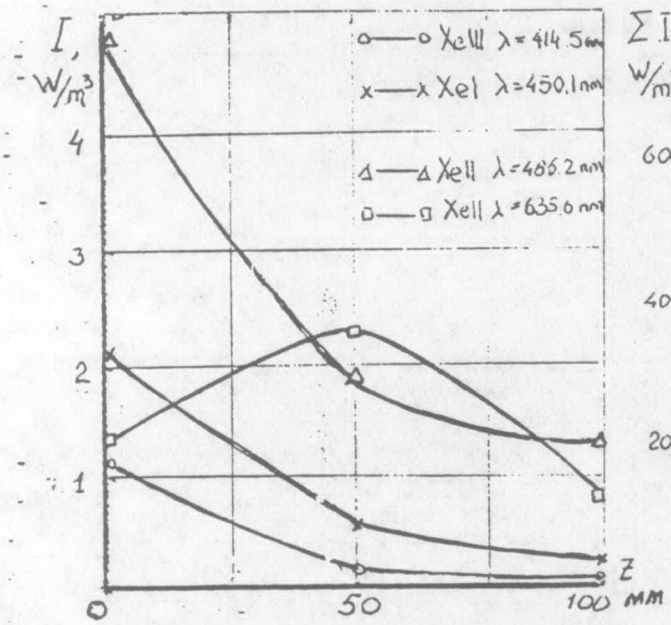


Fig.2
Dependence of spectral lines intesities on the distance from the outlet

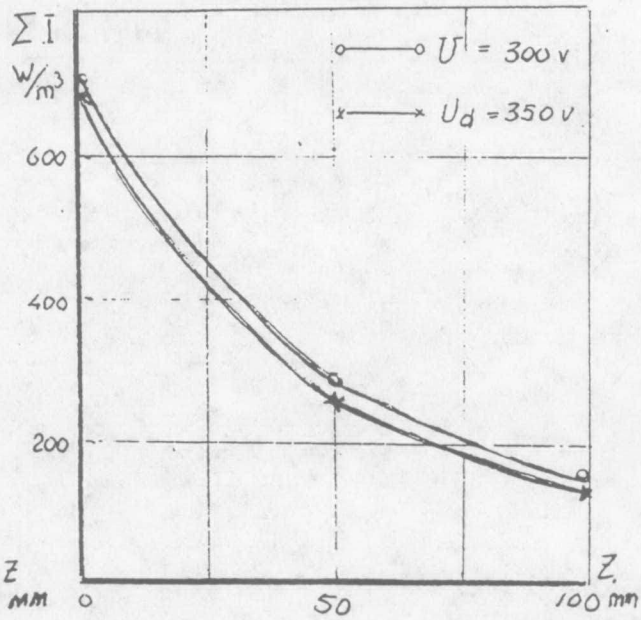


Fig.3
Dependence of integral power of plasm a jet radiation on the distance from the outlet