

TABLE 1

Spectrum of the pulsed discharge

 $p=5 \times 10^{-4}$ torr, $U_a=800$ V, $B=600$ Gs, spectrograph STE-1; 3rd order spectra w. l. range 3165–4660 Å; inverse disp. 6.4 Å/mm

spect. line	w. l. Å	rel. int. I_r	puls. sp. I	E_2 (eV)	transition	J
OII	4347.425*	(6)	2	28.51	3 s' ² D—3 p' ² D°	3/2—3/2
AII	4348.063	(50)	2	19.49	4 s ⁴ P—4 p ⁴ D°	5/2—7/2
OII	4351.269*	(6)	2	28.51	3 s' ² D—3 p' ² D°	5/2—5/2
AII	4370.751*	(15)	2	21.49	3 d ² D—4 p' ² D°	3/2—3/2
AII	4371.329	(20)	2	19.26	3 d ⁴ D—4 p ⁴ P°	5/2—3/2
OII	4414.909*	(10)	4	26.25	3 s ² P—3 p ² D°	3/2—5/2
AII	4545.045*	(25)	3	19.87	4 s ² P—4 p ² P°	3/2—3/2
AII	4579.346*	(25)	3	19.97	4 s ² P—4 p ² S°	1/2—1/2
AII	4609.560*	(25)	4	21.14	4 s' ² D—4 p' ² F°	5/2—7/2
OII	4649.139*	(10)	3	25.66	3 s ⁴ P—3 p ⁴ D°	5/2—7/2

Remark: The fourth column gives the intensities of the spectral lines in the pulsed discharge by the following: 1-weak, 2-moderate, 3-strong, 4-very strong. The asterisk corresponds to the laser wavelengths.

References

- 1) V. I. Miljević, Proc. III Yugoslav Symp. on Phys. of Ionized gases, Niš (1966) 81;
- 2) V. I. Miljević, Phys. Lett. 32 A (1970) 353.

3.33 The interaction of an extraordinary wave with inhomogeneous anisotropic plasma column at the lower hybrid resonance

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Abstract

In the frame of cold plasma theory the interaction of an extraordinary wave with an inhomogeneous anisotropic plasma column at the lower hybrid frequency range is investigated. The linear wave transformation mechanism at the resonant singularity leads to an appreciable energy transfer from the electromagnetic wave to the plasma. The influence of the magnetic field strength, plasma density, effective collision frequency and column dimension on the efficiency of the wave energy transfer is examined in a wide range of their variation. The plasma column exhibits a series of geometric resonances in the medium frequency domain which are characterized by strong wave absorption. The interaction in the high frequency domain gives rise to a marked main resonance in the absorption spectrum. A detailed study of the resonance pattern is carried out and the conditions of its existence are established.