

Precise QED calculations of Na-like spectra satellites to 2-3 Ne-like ion transitions

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The effective instrument for the spectroscopic diagnostic of the hot plasma are the dielectronic satellites to resonance 2-3 transitions of Ne-like ions [1-4]. Here we present the results of the theoretical calculation of spectra (wave-lengths, transition probabilities) of the 3-3,3-4 electron and 2-2 vacancy transitions for the Ne-like isoelectronic sequence ($Z=19-86$), the autoionization states for the Na-like ions: CIVII, ArVIII, Ti XII, FeXVI, Ge XXII, Se XXIV, Mo XXXII and others. Calculations are carried out on the basis of the relativistic perturbation theory with the zeroth ab initio effective potential approximation [1-5]. For construction of the optimal zeroth approximation it's used the ab initio QED procedure, within which the lowest order multielectron effects, in particular, the gauge dependent radiative contribution for the certain class of the photon propagator calibration is minimized. Such a minimization result in the construction of the optimal one-electron basis. As example, in table there are presented values of the energies [100(cm-1)] and probabilities [c(-1)] of electric dipole transitions into ground state for Ne-like ion of Ni.

Level J=1	*	This work	*	This work
2p(3/2)3s(1/2)	71.280	71.261	7,6+11	8,4+11
2p(1/2)3s(1/2)	72.620	72.585	6,0+11	7,2+11
2p(3/2)3d(3/2)	78.130	78.115	1,4+11	1,6+11
2p(3/2)3d(5/2)	79.110	79.104	1,2+13	1,2+13
2p(1/2)3d(3/2)	80.520	80.518	3,2+13	3,6+13

* experiment and compillation: Grance M.

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