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Preliminary report

STARK BROADENING PARAMETER TABLES FOR Kr II LINES

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SUMMARY: In order to provide the Stark broadening data for ion lines from complex spectra, here we present calculated Stark widths and shifts for 37 Kr II lines. The calculations were performed by using the modified semiempirical approach. Also the obtained results have been compared with existing experimental and theoretical data.

1. INTRODUCTION

With the developement of space born spectroscopy the interest for a large number of spectral line profile parameters is increasing additionally. For example Leckrone *et al.* (1993) stated that with the Goddard High Resolution Spectrograph (GHRS) aboard Hubble Space Telescope they "have doubled the number of heavy elements (22≤Z≤80) for which abundances in χ Lupi can be estimated, compared to ground-based data alone". Cardelli, Savage and Ebbets (1991) have used the GHRS for investigation of spectra of the interstellar medium, which more accurately represents the pre-stellar material from which the Ap and Bp stars (where Stark broadening data are of interest) are formed (Leckrone et al. 1993). For the first time they have begun to detect the elements as e.g. Krypton and Germanium.

Stark broadening for Kr II lines has the additional theoretical interest for the investigation of regularities and systematic trends for singly charged noble gas ions (see e.g. Dimitrijević and Popović 1989, Di Rocco 1990, Purić *et al.* 1991, Bertuccelli and Di Rocco 1993). It has been demonstrated in Dimitrijević and Popović (1989) how the regularities within a sequence of homologous elements may be used to estimate the needed Stark broadening data by using data for transitions from homologous elements. Stark broadening data for Xe II which is homologous with Kr II have been published recently (Popović and Dimitrijević 1996a). Spectral lines of Xe II are present in spectra of hot chemically peculiar (Hg-Mn) stars (e.g. Heacox 1979, Dobricheva *et al.* 1990), where Stark broadening is the main pressure broadening mechanism influencing line shape formation (Popović and Dimitrijević 1996b). The consistent set of Stark broadening data for Kr II and Xe II enables the investigation and testing of the regularities in the case of homologous atoms as well as Stark width estimates for noble gas ions homologous sequences.

Stark broadening for Kr II lines has been considered experimentally (see e.g. Brandt *et al.* 1981, Pittman and Konjević 1986, Vitel and Skowronek 1987, Uzelac and Konjević 1989, Lesage *et al.* 1989, Bertuccelli and Di Rocco 1991) and theoretically (see e.g. Bertuccelli and Di Rocco 1993). Bertuccelli and Di Rocco (1993) have calculated Kr II Stark widths for several lines by using analytical expression for the cross sections and rate coefficients based on the Born approximation with and without the empirical modification for the collision strength suggested by Robb and also with the help of semiempirical method (Griem 1968). Also estimates exist based on the dependence on atomic number and the upper level ion-

Table 1. Stark full widths (w) and shifts (d) of Kr II spectral lines. The electron density is $10^{23}\mathrm{m}^{-3}$.

Transition	T (1000 K)	w (nm)	d (nm)
$5s^4P_{1/2} - 5p^4S^0_{3/2}$	5000.	.451E-01	-.121E-01
	10000.	.312E-01	-.868E-02
	20000.	.218E-01	-.630E-02
	30000.	.182E-01	-.527E-02
$\lambda = 414.63$ nm	40000.	.166E-01	-.476E-02
	50000.	.157E-01	-.432E-02
$5s^4P_{3/2} - 5p^4S^0_{3/2}$	5000.	.346E-01	-.814E-02
	10000.	.240E-01	-.580E-02
	20000.	.168E-01	-.416E-02
	30000.	.140E-01	-.340E-02
$\lambda = 375.42$ nm	40000.	.126E-01	-.299E-02
	50000.	.120E-01	-.264E-02
$5s^4P_{5/2} - 5p^4S^0_{3/2}$	5000.	.293E-01	-.716E-02
	10000.	.203E-01	-.509E-02
	20000.	.142E-01	-.364E-02
	30000.	.118E-01	-.296E-02
$\lambda = 346.01$ nm	40000.	.107E-01	-.257E-02
	50000.	.101E-01	-.226E-02
$5s^4P_{1/2} - 5p^4P^0_{1/2}$	5000.	.802E-01	-.238E-01
	10000.	.556E-01	-.172E-01
	20000.	.387E-01	-.128E-01
	30000.	.321E-01	-.110E-01
$\lambda = 549.95$ nm	40000.	.288E-01	-.103E-01
	50000.	.272E-01	-.996E-02
$5s^4P_{1/2} - 5p^4P^0_{3/2}$	5000.	.924E-01	-.292E-01
	10000.	.640E-01	-.212E-01
	20000.	.446E-01	-.158E-01
	30000.	.370E-01	-.137E-01
$\lambda = 599.22$ nm	40000.	.333E-01	-.129E-01
	50000.	.315E-01	-.125E-01
$5s^4P_{3/2} - 5p^4P^0_{1/2}$	5000.	.580E-01	-.154E-01
	10000.	.402E-01	-.111E-01
	20000.	.280E-01	-.819E-02
	30000.	.231E-01	-.697E-02
$\lambda = 483.21$ nm	40000.	.207E-01	-.642E-02
	50000.	.195E-01	-.620E-02
$5s^4P_{3/2} - 5p^4P^0_{3/2}$	5000.	.653E-01	-.186E-01
	10000.	.452E-01	-.135E-01
	20000.	.315E-01	-.999E-02
	30000.	.260E-01	-.857E-02
$\lambda = 520.83$ nm	40000.	.234E-01	-.796E-02
	50000.	.220E-01	-.771E-02
$5s^4P_{3/2} - 5p^4P^0_{5/2}$	5000.	.678E-01	-.170E-01
	10000.	.470E-01	-.123E-01
	20000.	.327E-01	-.907E-02
	30000.	.270E-01	-.774E-02
$\lambda = 530.87$ nm	40000.	.241E-01	-.716E-02
	50000.	.226E-01	-.694E-02

Transition	T (1000 K)	w (nm)	d (nm)
$5s^4P_{5/2} - 5p^4P^0_{3/2}$	5000.	.521E-01	-.154E-01
	10000.	.361E-01	-.111E-01
	20000.	.251E-01	-.818E-02
	30000.	.207E-01	-.698E-02
$\lambda = 465.89$ nm	40000.	.186E-01	-.643E-02
	50000.	.175E-01	-.619E-02
$5s^4P_{5/2} - 5p^4P^0_{5/2}$	5000.	.539E-01	-.140E-01
	10000.	.374E-01	-.101E-01
	20000.	.260E-01	-.742E-02
	30000.	.214E-01	-.629E-02
$\lambda = 473.90$ nm	40000.	.191E-01	-.576E-02
	50000.	.179E-01	-.555E-02
$5s^4P_{1/2} - 5p^4D^0_{1/2}$	5000.	.504E-01	-.154E-01
	10000.	.349E-01	-.111E-01
	20000.	.244E-01	-.818E-02
	30000.	.202E-01	-.696E-02
$\lambda = 443.17$ nm	40000.	.183E-01	-.639E-02
	50000.	.173E-01	-.609E-02
$5s^4P_{1/2} - 5p^4D^0_{3/2}$	5000.	.574E-01	-.189E-01
	10000.	.397E-01	-.137E-01
	20000.	.277E-01	-.101E-01
	30000.	.229E-01	-.863E-02
$\lambda = 481.18$ nm	40000.	.207E-01	-.798E-02
	50000.	.196E-01	-.768E-02
$5s^4P_{3/2} - 5p^4D^0_{1/2}$	5000.	.382E-01	-.105E-01
	10000.	.265E-01	-.752E-02
	20000.	.184E-01	-.548E-02
	30000.	.153E-01	-.459E-02
$\lambda = 398.79$ nm	40000.	.137E-01	-.415E-02
	50000.	.130E-01	-.392E-02
$5s^4P_{3/2} - 5p^4D^0_{3/2}$	5000.	.426E-01	-.127E-01
	10000.	.295E-01	-.914E-02
	20000.	.205E-01	-.670E-02
	30000.	.170E-01	-.566E-02
$\lambda = 429.29$ nm	40000.	.152E-01	-.516E-02
	50000.	.144E-01	-.494E-02
$5s^4P_{3/2} - 5p^4D^0_{5/2}$	5000.	.568E-01	-.124E-01
	10000.	.394E-01	-.894E-02
	20000.	.274E-01	-.657E-02
	30000.	.226E-01	-.556E-02
$\lambda = 476.54$ nm	40000.	.202E-01	-.510E-02
	50000.	.191E-01	-.492E-02
$5s^4P_{5/2} - 5p^4D^0_{3/2}$	5000.	.353E-01	-.109E-01
	10000.	.245E-01	-.781E-02
	20000.	.170E-01	-.570E-02
	30000.	.140E-01	-.479E-02
$\lambda = 391.26$ nm	40000.	.126E-01	-.432E-02
	50000.	.119E-01	-.412E-02

Table 1. (continued)

Transition	T (1000 K)	w (nm)	d (nm)
	5000.	.462E-01	-.105E-01
	10000.	.320E-01	-.754E-02
$5s^4P_{5/2} - 5p^4D^0_{5/2}$	20000.	.223E-01	-.551E-02
	30000.	.184E-01	-.463E-02
$\lambda = 430.15$ nm	40000.	.164E-01	-.420E-02
	50000.	.154E-01	-.402E-02
	5000.	.451E-01	-.116E-01
	10000.	.312E-01	-.832E-02
$5s^4P_{5/2} - 5p^4D^0_{7/2}$	20000.	.217E-01	-.609E-02
	30000.	.179E-01	-.513E-02
$\lambda = 435.55$ nm	40000.	.159E-01	-.465E-02
	50000.	.150E-01	-.445E-02
	5000.	.572E-01	-.173E-01
	10000.	.396E-01	-.125E-01
$5s^2P_{3/2} - 5p^2P^0_{1/2}$	20000.	.276E-01	-.919E-02
	30000.	.229E-01	-.780E-02
$\lambda = 484.66$ nm	40000.	.206E-01	-.714E-02
	50000.	.195E-01	-.687E-02
	5000.	.493E-01	-.146E-01
	10000.	.341E-01	-.104E-01
$5s^2P_{3/2} - 5p^2P^0_{3/2}$	20000.	.237E-01	-.764E-02
	30000.	.197E-01	-.641E-02
$\lambda = 461.53$ nm	40000.	.177E-01	-.581E-02
	50000.	.168E-01	-.553E-02
	5000.	.489E-01	-.138E-01
	10000.	.338E-01	-.994E-02
$5s^2P_{3/2} - 5p^2D^0_{5/2}$	20000.	.235E-01	-.725E-02
	30000.	.195E-01	-.607E-02
$\lambda = 461.91$ nm	40000.	.175E-01	-.548E-02
	50000.	.166E-01	-.521E-02
	5000.	.361E-01	-.882E-02
	10000.	.249E-01	-.629E-02
$5s^2P_{3/2} - 5p^2D^0_{3/2}$	20000.	.174E-01	-.452E-02
	30000.	.144E-01	-.371E-02
$\lambda = 425.06$ nm	40000.	.130E-01	-.330E-02
	50000.	.124E-01	-.305E-02
	5000.	.426E-01	-.166E-01
	10000.	.295E-01	-.834E-01
$5s^2P_{3/2} - 5p^2S^0_{1/2}$	20000.	.205E-01	-.605E-01
	30000.	.170E-01	-.502E-01
$\lambda = 418.51$ nm	40000.	.154E-01	-.451E-01
	50000.	.146E-01	-.421E-01
	5000.	.602E-01	-.196E-01
	10000.	.417E-01	-.141E-01
$5s^2P_{1/2} - 5p^2S^0_{1/2}$	20000.	.291E-01	-.104E-01
	30000.	.242E-01	-.887E-01
$\lambda = 468.04$ nm	40000.	.220E-01	-.822E-01
	50000.	.209E-01	-.783E-01

Transition	T (1000 K)	w (nm)	d (nm)
	5000.	.525E-01	-.1628E-01
	10000.	.363E-01	-.117E-01
$5s^2P_{1/2} - 5p^2D^0_{3/2}$	20000.	.253E-01	-.862E-02
	30000.	.211E-01	-.734E-02
$\lambda = 476.24$ nm	40000.	.192E-01	-.681E-02
	50000.	.183E-01	-.649E-02
	5000.	.719E-01	-.249E-01
	10000.	.498E-01	-.180E-01
$5s^2P_{1/2} - 5p^2P^0_{3/2}$	20000.	.347E-01	-.133E-01
	30000.	.289E-01	-.114E-01
$\lambda = 522.51$ nm	40000.	.261E-01	-.106E-01
	50000.	.249E-01	-.103E-01
	5000.	.841E-01	-.295E-01
	10000.	.582E-01	-.214E-01
$5s^2P_{1/2} - 5p^2P^0_{1/2}$	20000.	.406E-01	-.159E-01
	30000.	.338E-01	-.137E-01
$\lambda = 522.35$ nm	40000.	.306E-01	-.128E-01
	50000.	.291E-01	-.125E-01
	5000.	.604E-01	-.969E-02
	10000.	.454E-01	-.565E-02
$5s'^2D_{3/2} - 5p'^2F^0_{5/2}$	20000.	.349E-01	-.358E-02
	30000.	.296E-01	-.293E-02
$\lambda = 463.39$ nm	40000.	.262E-01	-.289E-02
	50000.	.296E-01	-.275E-02
	5000.	.513E-01	-.145E-01
	10000.	.367E-01	-.990E-02
$5s'^2D_{3/2} - 5p'^2P^0_{3/2}$	20000.	.270E-01	-.672E-02
	30000.	.230E-01	-.546E-02
$\lambda = 442.27$ nm	40000.	.209E-01	-.484E-02
	50000.	.198E-01	-.464E-02
	5000.	.398E-01	-.101E-01
	10000.	.276E-01	-.724E-01
$5s'^2D_{3/2} - 5p'^2P^0_{1/2}$	20000.	.194E-01	-.520E-01
	30000.	.161E-01	-.420E-01
$\lambda = 405.70$ nm	40000.	.145E-01	-.371E-01
	50000.	.137E-01	-.344E-01
	5000.	.399E-01	-.807E-02
	10000.	.277E-01	-.619E-02
$5s'^2D_{3/2} - 5p'^2D^0_{3/2}$	20000.	.193E-01	-.448E-02
	30000.	.159E-01	-.372E-02
$\lambda = 406.51$ nm	40000.	.143E-01	-.332E-02
	50000.	.134E-01	-.312E-02
	5000.	.390E-01	-.857E-02
	10000.	.271E-01	-.613E-02
$5s'^2D_{3/2} - 5p'^2D^0_{5/2}$	20000.	.188E-01	-.444E-02
	30000.	.155E-01	-.368E-02
$\lambda = 404.47$ nm	40000.	.139E-01	-.329E-02
	50000.	.131E-01	-.309E-02

Table 1. (continued)

Transition	T (1000 K)	w (nm)	d (nm)
$5s'^2D_{5/2} - 5p'^2D^0_{5/2}$ $\lambda = 408.83$ nm	5000.	.402E-01	-.901E-02
	10000.	.278E-01	-.645E-02
	20000.	.194E-01	-.468E-02
	30000.	.160E-01	-.389E-02
	40000.	.143E-01	-.348E-02
	50000.	.135E-01	-.328E-02
$5s'^2D_{5/2} - 5p'^2D^0_{3/2}$ $\lambda = 410.92$ nm	5000.	.411E-01	-.9115E-02
	10000.	.285E-01	-.6523E-02
	20000.	.199E-01	-.4728E-02
	30000.	.164E-01	-.3930E-02
	40000.	.147E-01	-.3514E-02
	50000.	.138E-01	-.3307E-02
$5s'^2D_{5/2} - 5p'^2P^0_{3/2}$ $\lambda = 447.50$ nm	5000.	.529E-01	-.152E-01
	10000.	.379E-01	-.103E-01
	20000.	.279E-01	-.705E-02
	30000.	.237E-01	-.574E-02
	40000.	.216E-01	-.509E-02
	50000.	.204E-01	-.489E-02
$5s'^2D_{5/2} - 5p'^2F^0_{5/2}$ $\lambda = 469.13$ nm	5000.	.623E-01	-.102E-01
	10000.	.468E-01	-.603E-02
	20000.	.359E-01	-.385E-02
	30000.	.305E-01	-.316E-02
	40000.	.270E-01	-.302E-02
	50000.	.305E-01	-.296E-02
$5s'^2D_{5/2} - 5p'^2F^0_{7/2}$ $\lambda = 457.72$ nm	5000.	.508E-01	-.126E-01
	10000.	.352E-01	-.908E-02
	20000.	.245E-01	-.665E-02
	30000.	.202E-01	-.561E-02
	40000.	.180E-01	-.510E-02
	50000.	.169E-01	-.489E-02

Table 2. Comparison of theoretical Stark widths (w_{th} – FWHM) with experimental data (w_m). (1) – Bertuccelli and Di Rocco 1991, (2) – Lesage *et al.* 1989, (3) – Brandt *et al.* 1981. (4) – Uzelac and Konjević 1989, (5) – Vitel and Skowronek 1987, Stark widths are given for an electron density of 10^{23}m^{-3}.

Transition	λ (nm)	T (1000 K)	w_m (nm)	w_m/w_{th}	Ref.
$5s^4P - 5p^4S^0$	414.5	14.5	0.030	1.16	(1)
$5s^4P - 5p^4P^0$	473.9	11.0	0.049	1.36	(2)
		11.5	0.040	1.13	(4)
		11.65	0.039	1.10	(4)
		11.9	0.048	1.38	(4)
		12.0	0.041	1.18	(3)
		12.5	0.039	1.15	(4)
		12.75	0.039	1.17	(4)
		14.5	0.041	1.32	(1)
		14.9	0.030	1.00	(5)
		15.5	0.030	1.02	(5)
		15.7	0.025	0.87	(5)
		16.2	0.026	0.89	(5)
		17.4	0.025	0.87	(5)
	465.89	11.0	0.045	1.30	(2)
		11.5	0.040	1.17	(4)
		11.65	0.041	1.20	(4)
		11.9	0.039	1.18	(4)
		12.5	0.040	1.23	(4)
		12.75	0.039	1.21	(4)
		14.5	0.039	1.30	(1)
		14.9	0.029	1.00	(5)
		15.5	0.029	1.01	(5)
		16.2	0.027	0.95	(5)
		17.4	0.028	1.02	(5)
	483.2	14.5	0.039	1.17	(1)
	520.8	12.0	0.038	1.01	(3)
$5s^4P - 5p^4D^0$	429.29	11.0	0.030	1.06	(2)
		14.5	0.038	1.56	(1)
	435.55	11.0	0.039	1.30	(2)
		11.5	0.038	1.28	(4)
		11.65	0.039	1.34	(4)
		11.9	0.038	1.32	(4)
		12.5	0.039	1.38	(4)
		12.75	0.038	1.37	(4)
		14.5	0.046	1.78	(1)
		14.9	0.025	0.99	(5)
		15.5	0.026	1.05	(5)
		16.2	0.024	0.97	(5)
		17.4	0.020	0.86	(5)
	443.1	11.0	0.031	0.94	(2)
		14.5	0.037	1.31	(1)
	476.57	11.0	0.051	1.34	(2)
		11.0	0.039	1.03	(3)
		12.0	0.039	1.07	(3)
		14.5	0.044	1.35	(1)
	481.1	14.5	0.031	0.94	(1)
$5s^2P - 5p^2P^0$	484.61	12.0	0.034	0.90	(3)
		14.5	0.037	1.05	(1)
$5s^2P - 5p^2D^0$	476.2	12.0	0.039	1.11	(3)
		14.5	0.037	1.25	(1)
	461.53	12.0	0.030	0.91	(3)
		14.5	0.034	1.23	(1)
	461.91	11.0	0.054	1.60	(2)

Table 2. (continued)

Transition	λ (nm)	T (1000 K)	w_m (nm)	w_m/w_{th}	Ref.
		12.0	0.034	1.10	(3)
		14.5	0.034	1.24	(1)
	425.06	14.5	0.031	1.52	(1)
$5s'^2D - 5p'^2F^0$	463.39	12.0	0.032	0.73	(3)
		14.5	0.038	1.00	(1)
	457.7	14.5	0.039	1.30	(1)
$5s'^2D - 5p'^2D^0$	410.9	14.5	0.040	1.67	(1)
	408.8	14.5	0.032	1.40	(1)
	406.5	14.5	0.044	1.89	(1)
$5s'^2D - 5p'^2P^0$	40.57	14.5	0.044	1.97	(1)

Table 3. Comparison of theoretical Stark shifts (d_{th}) with experimental (d_m) ones given by Vitel and Skowronek (1987).

λ	N (10^{23}m^{-3})	T (1000 K)	d_m (nm)	d_{th}	d_m/d_{th}
435.55	7.6	15.5	-0.00	-0.045	–
	9.2	14.9	-0.01	-0.055	0.18
	12.3	16.2	-0.02	-0.074	0.27
	15.8	17.4	-0.02	-0.092	0.21
465.89	7.6	15.5	-0.08	-0.070	1.14
	9.2	14.9	-0.07	-0.083	0.85
	12.3	16.2	-0.09	-0.109	0.82
	15.8	17.4	-0.11	-0.134	0.82
473.90	7.6	15.5	-0.06	-0.063	0.95
	9.2	14.9	-0.04	-0.076	0.52
	12.3	16.2	-0.06	-0.098	0.61
	15.8	17.4	-0.08	-0.123	0.65
	16.2	15.7	-0.08	-0.129	0.62

Table 4. Comparison of our theoretical Stark widths (w_{th}) with theoretical ones calculated by Bertuccelli and Di Rocco (1993), the latter being obtained by using in succession: a) Born approximation with the empirical modification for the collision strength suggested by Robb (w_{BDR-R}); b) without the Robb modification (w_{BDR}); c) using Griem's semiempirical approach (w_G). The value of $< w_{exp}/w_{th} >$ is the mean ratio between all experimental values for the considered line widths and our theoretical Stark widths while $< w/w_{th} >$ (the last row in Table) is the mean of ratios listed in the columns.

λ (nm)	w_{BDR-R}/w_{th}	w_{BDR}/w_{th}	w_G/w_{th}	$< w_{exp}/w_{th} >$
484.6	1.77	1.60	1.32	0.98
483.2	1.64	1.47	1.20	1.17*
476.5	1.98	1.78	1.21	1.20
476.2	2.18	1.96	1.58	1.18
473.9	1.77	1.60	1.07	1.10
465.8	1.91	1.73	1.19	1.14
461.9	2.49	2.25	1.68	1.37
461.5	2.17	1.98	1.47	1.07
443.1	1.63	1.47	1.32	1.12
435.5	2.00	1.93	1.23	1.35
429.2	2.05	1.84	1.38	1.31
425.0	2.62	2.36	1.79	1.52*
406.5	1.09	0.98	3.78	1.89*
$< w/w_{th} >$	1.95	1.76	1.56	1.26

* Only experimental data from Bertuccelli and Di Rocco (1993).

ization potential, established from the consideration of regularities (Di Rocco 1990, Purić *et al.* 1991, Bertuccelli and Di Rocco 1991, 1993).

In order to enlarge as much as possible the available set of reliable Stark broadening data needed for the investigation of astrophysical and laboratory plasmas, we have calculated Stark widths and shifts for 37 spectral lines from 5s-5p transition array of singly charged kripton, by using the modified semiempirical approach (Dimitrijević and Konjević 1980, Dimitrijević and Kršljanin 1986). Due to the complexity of Kr II spectrum, calculations were performed as in Popović and Dimitrijević (1996c). Our results for Stark widths and shifts are compared with the available experimental and theoretical data.

2. RESULTS AND DISCUSION

All relevant details concerning the obtained results and the calculation procedure have been published in Popović and Dimitrijević (1998). Here we present tables of Stark widths and compare our results with available experimental and theoretical data.

The atomic energy levels needed for the calculation were taken from Sugar and Musgrove (1991). Oscillator strengths have been calculated by using the method of Bates and Damgaard (1949).

In Table 1 we present Stark widths and shifts for 37 Kr II lines obtained for temperatures from 5000 K up to 50000 K and at an electron density of $10^{23}m^{-3}$. Since we have found that the ion broadening contribution to the line widths is a few per cents, only the electron broadening contribution is given.

Our results for Stark widths have been compared in Table 2 with available experimental data (Brandt *et al.* 1981, Vitel and Skowronek 1987, Uzelac and Konjević 1989, Lesage *et al.* 1989, Bertuccelli and Di Rocco 1990). The ratio of measured and calculated data varies between 0.73 and 1.97 (or 1.60 if we omit the results of Bertuccelli and Di Rocco 1991).

There are Stark shift experimental data for three Kr II lines (Vitel and Skowronek 1987). The comparison between our calculations and experimental Stark shifts is shown in Table 3. One should notice that the theoretical shifts are generally of lower accuracy than are widths (see e.g. Dimitrijević *et al.* 1981, Popović *et al.* 1993).

In Table 4 comparison is presented of our theoretical Stark widths (w_{th}) with theoretical ones calculated by Bertuccelli and Di Rocco (1993), the latter being obtained by using alternately: a) Born approximation with the empirical modification for the collision strength suggested by Robb (w_{BDR-R}); b) without the Robb modification (w_{BDR}); c) using Griem's (1968) semiempirical approach (w_G).

The detailed discussion of obtained results is given in Popović and Dimitrijević (1998).

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ТАБЛИЦЕ ПАРАМЕТАРА ШТАРКОВИХ ШИРИНА ЗА ЛИНИЈЕ Kr II

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Претходно саопштење

У циљу обезбеђивања података за Штарково ширење линија јона са комплексним спектром, овде су дате табеле Штаркових ширина и помака за 37 линија једанпут јонизованог криптона. Рачун је изведен помоћу модификоване семиемпиријске апроксимације. Добијени резултати су упоређени са постојећим експерименталним и теоријским подацима.