

COLLISIONAL PROFILES OF IONIZED CALCIUM PERTURBED BY HELIUM

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In continuation of Homeier et al. [1] and Allard et al. [2] where we presented absorption spectra of Na-He in cool white dwarfs, we extend this work to the Ca⁺-He system. The perturber density in the lineforming region of an ultra-cool WD atmosphere can reach the value of 10²¹ cm⁻³, multiple perturber effects are taken into account using an expansion in density [3]. New diabatic potentials compared to pseudo-potentials of Czuchaj et al. [4] are used to evaluate the line wings.

References

- [1] Homeier, D., Allard, N. F., Johnas, C., M. S., Hauschildt, P. H., Allard, F.: 2007, *ASP Conference Series*, **372**, 277.
- [2] Allard, N. F., Nakayama, A., Spiegelman, F., Kielkopf, J. F., Stienkemeier, F.: 2012, *JPhCS Series*, **397**, 12067, 2012.
- [3] Royer, A.: 1971, *Phys Rev. A*, **3**, 2044.
- [4] Czuchaj, E., Rebentrost, F., Stoll, H., Preuss, H.: 1996, *Chem. Phys.*, **207**, 51.