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LINE PROFILES OF Li-H_2

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Alkali line profiles based on pseudo-potentials of Rossi and Pascale [1] have been included in atmosphere program PHOENIX for the computation of atmosphere models and synthetic spectra, this was a major improvement compared to previous calculations of Allard et al. [2] who included Lorentzian profiles using van der Waals damping constant to generate atmosphere models of brown dwarfs.

In this work we report new Li-H_2 *ab initio* potentials and transition dipole moment functions calculated for several collision geometries and present new theoretical Li line profiles and their dependence with temperature.

References

[1] Rossi, F., and Pascale, J.: 1985, *Phys. Rev. A*, **32**, 2657.
[2] Allard, F. et al.: 2001, *ApJ*, **556**, 357.