

APPLICATION OF THE 'MLR' DIRECT POTENTIAL FITTING (DPF) METHOD FOR THE $X^1\Sigma_g^+$ STATE OF Cs_2

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A set of 16544 $A^1\Sigma_u^+ - X^1\Sigma_g^+$ fluorescence line positions^a with a measurement precision of 0.001 cm^{-1} , and which samples ground state levels up to $v'' = 135$ lying about 28 cm^{-1} below the dissociation limit, has been employed in least-squares fits using the MLR direct potential fitting approach^b. As well as the extended MLR model employed recently for Li_2 , a further extension employing three y_i -variables leads to an optimum model for Cs_2 that ensures a realistic extrapolation into the long-range region in accord with the theoretical dispersion constants.

^aC. Amiot and O. Dulieu, *J. Chem. Phys.* **117**, 5155 (2002).

^bR. J. Le Roy and R. D. E. Henderson, *Mol. Phys.* **105**, 663 (2007).