Abstract Submitted
for the DAMOP11 Meeting of
The American Physical Society

Hyperfine structure of Cs_2 and RbCs excited molecules NADIA BOULOUFA, OLIVIER DULIEU, Laboratoire Aime Cotton, CNRS, Orsay, OLIVER KRIEGELSTEINER, Institut für Experimentalphysik und Zentrum für Quantenphysik, Universität Innsbruck, Austria, ROMAIN VEXIAU, ANNE CRUBELLIER, Laboratoire Aime Cotton, CNRS, Orsay, France, JOHANN GEORG DANZL, HANS-CHRISTOPH NÄGERL, Institut für Experimentalphysik und Zentrum für Quantenphysik, Universität Innsbruck, Austria — Unlike ground state alkali-metal diatomics, very little is known about the hyperfine structure of excited electronic states. We present a preliminary analysis of the expected structure of the rovibrational levels of the Cs_2 and RbCs excited electronic states correlated to the lowest $^2S+^2P$ limit based on an asymptotic model for the hyperfine Hamiltonian [1]. We set up potential curves built on long-range atom-atom interaction connected to short-range ab-initio results obtained in our group. The hyperfine structure strongly depends on the projection of the total angular momentum of the molecule, and on the sum of projections of the total angular momentum of the separated atoms. The comparison with the experimental data recorded in Innsbruck [2] will be presented. The possible interaction of electronic states at short distances due to hyperfine coupling is discussed.

[1] D. Comparat, et al, Eur. Phys. J. D 11, 59 (2000)
[2] J. G. Danzl et al Faraday Disc. 142, 283 (2009)

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Date submitted: 10 Feb 2011 Electronic form version 1.4