Abstract Submitted
for the DAMOP11 Meeting of
The American Physical Society

Hyperfine structure of Cs₂ and RbCs excited molecules NA-
DIA BOULOUFA, OLIVIER DULIEU, Laboratoire Aime Cotton, CNRS, Or-
say, OLIVER KRIEGELSTEINER, Institut für Experimentalphysik und Zent-
rum 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 ex-
cited electronic states. We present a preliminary analysis of the expected structure
of the rovibrational levels of the Cs₂ and RbCs excited electronic states correlated
to the lowest ²S+²P limit based on an asymptotic model for the hyperfine Hamil-
tonian [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 sep-
parated 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.


Olivier Dulieu
Laboratoire Aime Cotton, CNRS, Orsay

Date submitted: 10 Feb 2011

Electronic form version 1.4