LASER EXCITATION SPECTROSCOPY OF ^{58}NiH IN A MAGNETIC FIELD

CYRIL RICHARD, HEATHER HARKER, PATRICK CROZET and AMANDA J. ROSS, *LASIM, Université Lyon 1 & CNRS, 43 Bd du 11 novembre 1918, F-69622 Villeurbanne, France*; DENNIS TOKARYK, *Department of Physics and Center for Laser, Atomic, and Molecular Sciences, University of New Brunswick, Fredericton, Canada E3B 5A3.*

Recent laboratory measurements of isotopologue ^{58}NiH by laser excitation around 17000−18000 cm^{-1} in a magnetic field have allowed us to study several electronic systems of this molecule. Zeeman patterns were analysed using literature values for ground state Landé factors[a]. Effective electronic Landé factors g_{eff} have been determined. They show strong variation with parity in the rotational levels in some Ω'=3/2 states, giving evidence for extensive mixing between excited electronic states.

Effective electronic Landé factors g_{eff}

	$E(\Omega = 3/2), v = 1$		$I(\Omega = 3/2), v = 0$	
J	e	f	e	f
1.5	1.058	1.142	1.640	1.638
2.5	0.992	1.365	1.937	1.895
3.5	0.844	1.737	2.371	2.294
4.5	0.587	2.238	2.870	2.734
5.5	0.415	2.933	3.552	3.328
6.5	0.233	3.671	4.326	4.110

[a]McCarthy et al. JCP 107 (1997) 4179