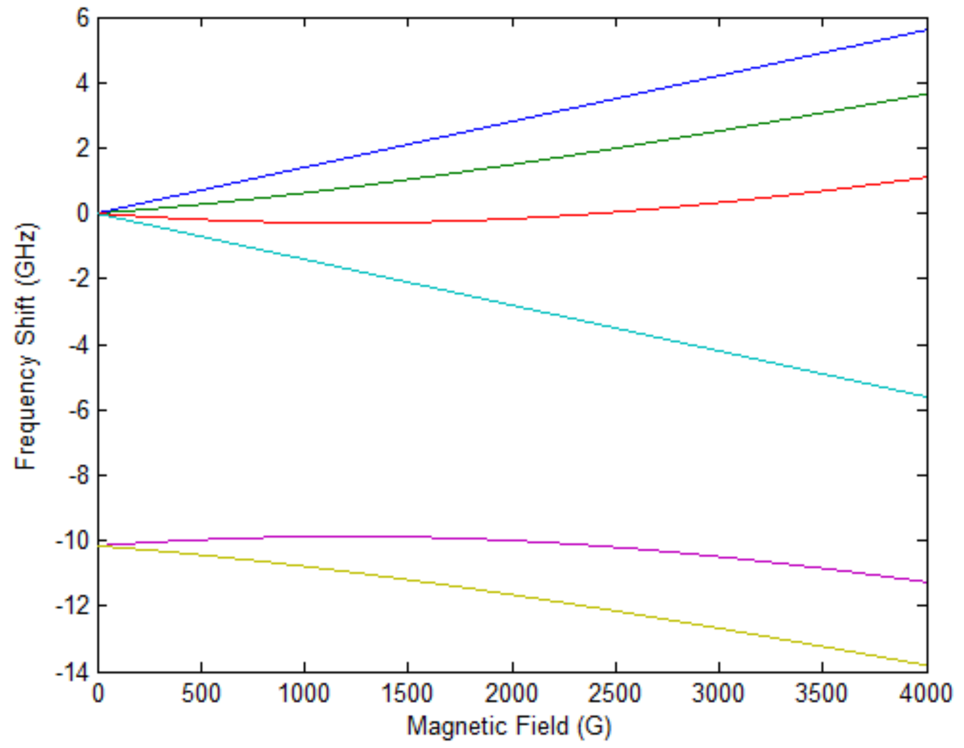
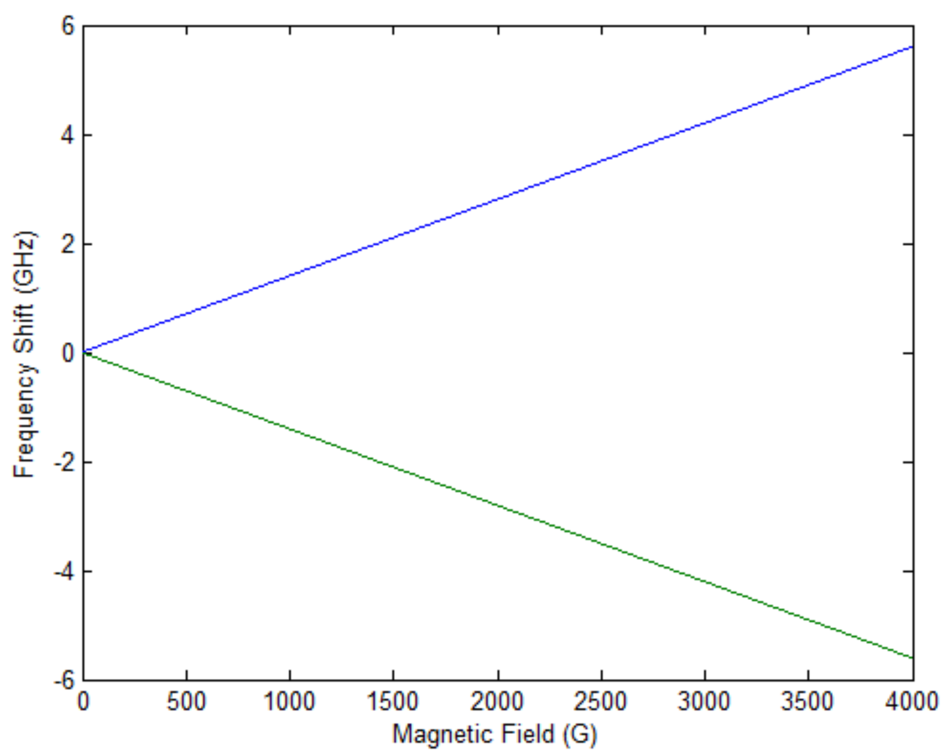
OH cheat sheet

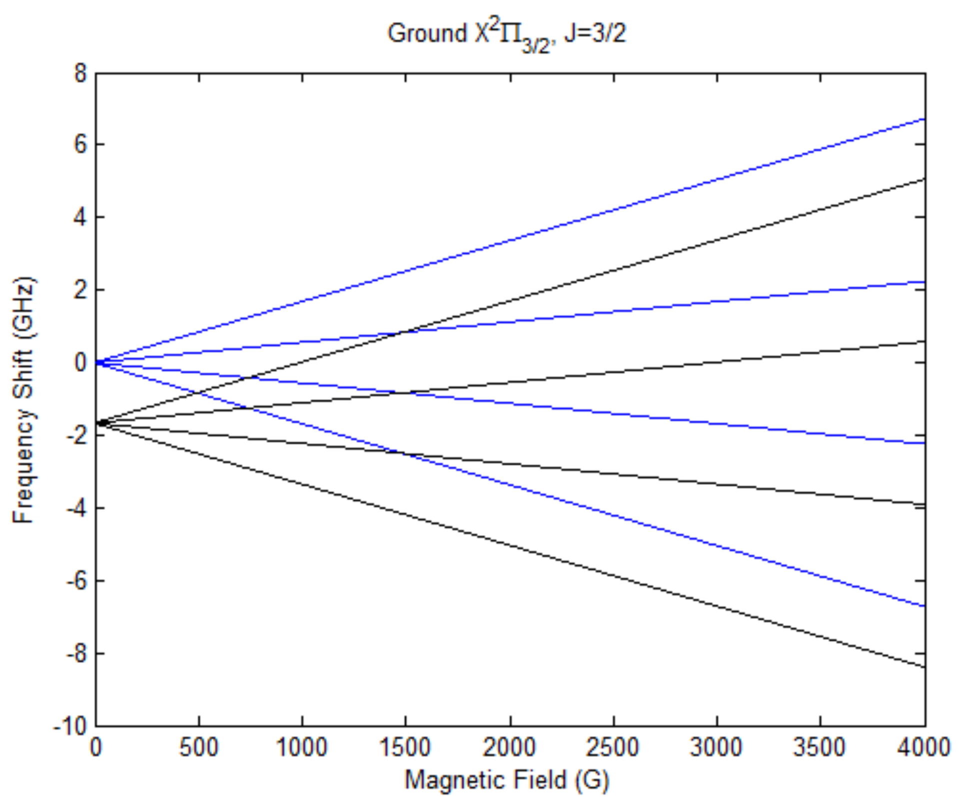
N=1

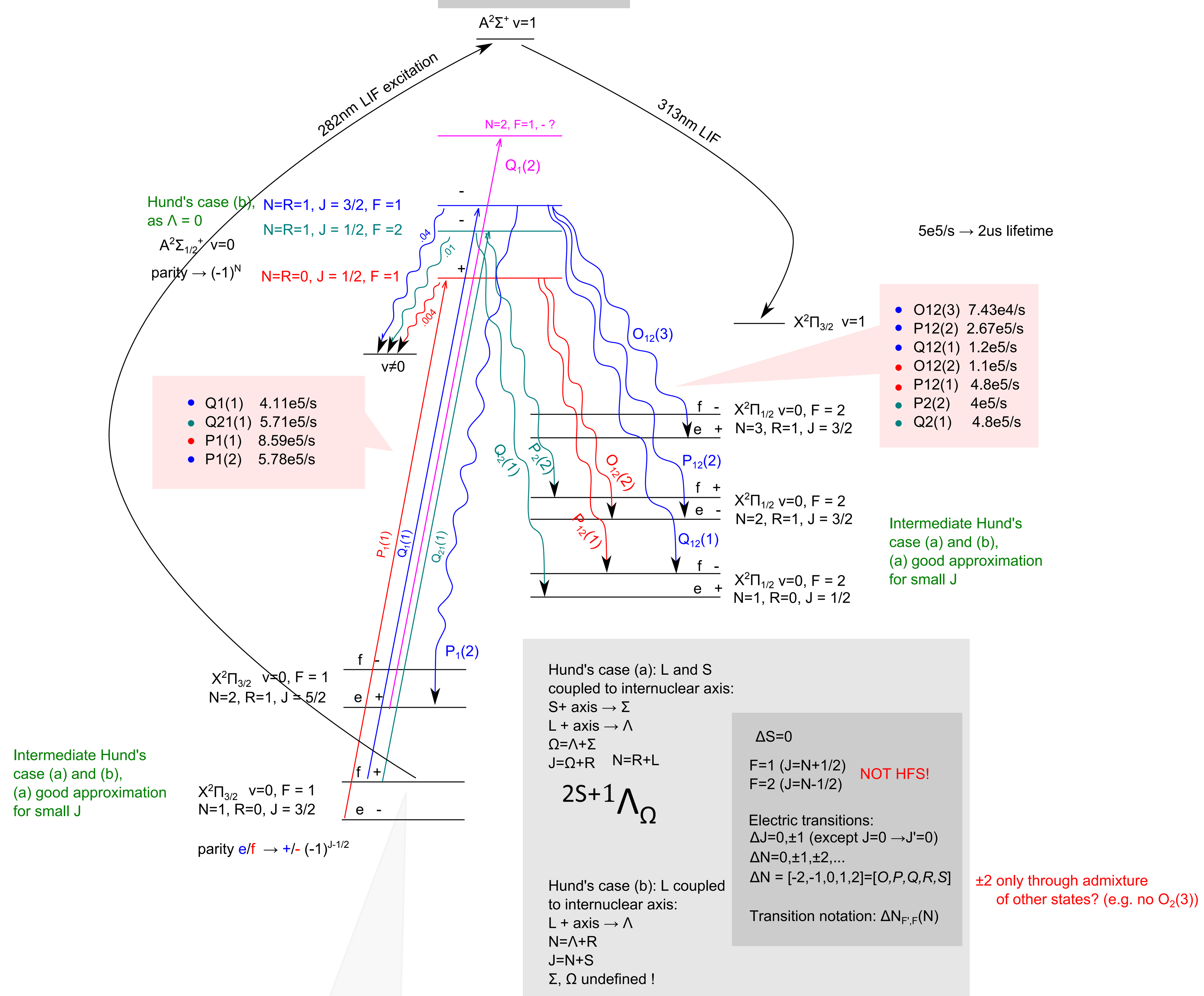


N=0



GS





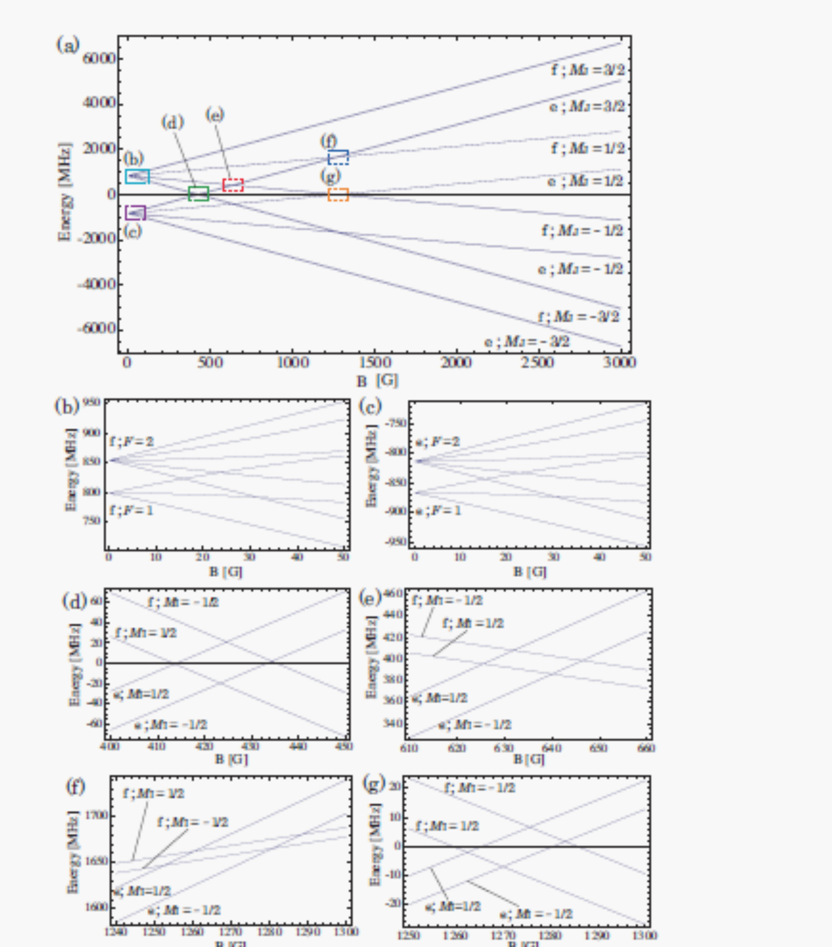


Figure 8. (a) The Zeeman effect for OH in the $v = 0$, $X^2\Pi_{3/2}$, $J = 3/2$ ground state. The closeups of hyperfine structure (b) for odd parity states (f-states) in zero field and (c) for even parity states (e-states) almost coincide with each other, except for the Λ-doubling splitting, since the dominant part of the Zeeman effect Eq. (44) is the same. (d)-(g) show the level crossings between opposite parity states $|e; M_I = \pm1/2\rangle$ and $|f; M_I = \pm1/2\rangle$, approaching to the asymptotic states (d) $|e; M_J = 3/2\rangle$ and $|f; M_J = -3/2\rangle$, (e) $|e; M_J = 3/2\rangle$ and $|f; M_J = -1/2\rangle$, (f) $|e; M_J = 3/2\rangle$ and $|f; M_J = 1/2\rangle$, and (g) $|e; M_J = 1/2\rangle$ and $|f; M_J = -1/2\rangle$, respectively.

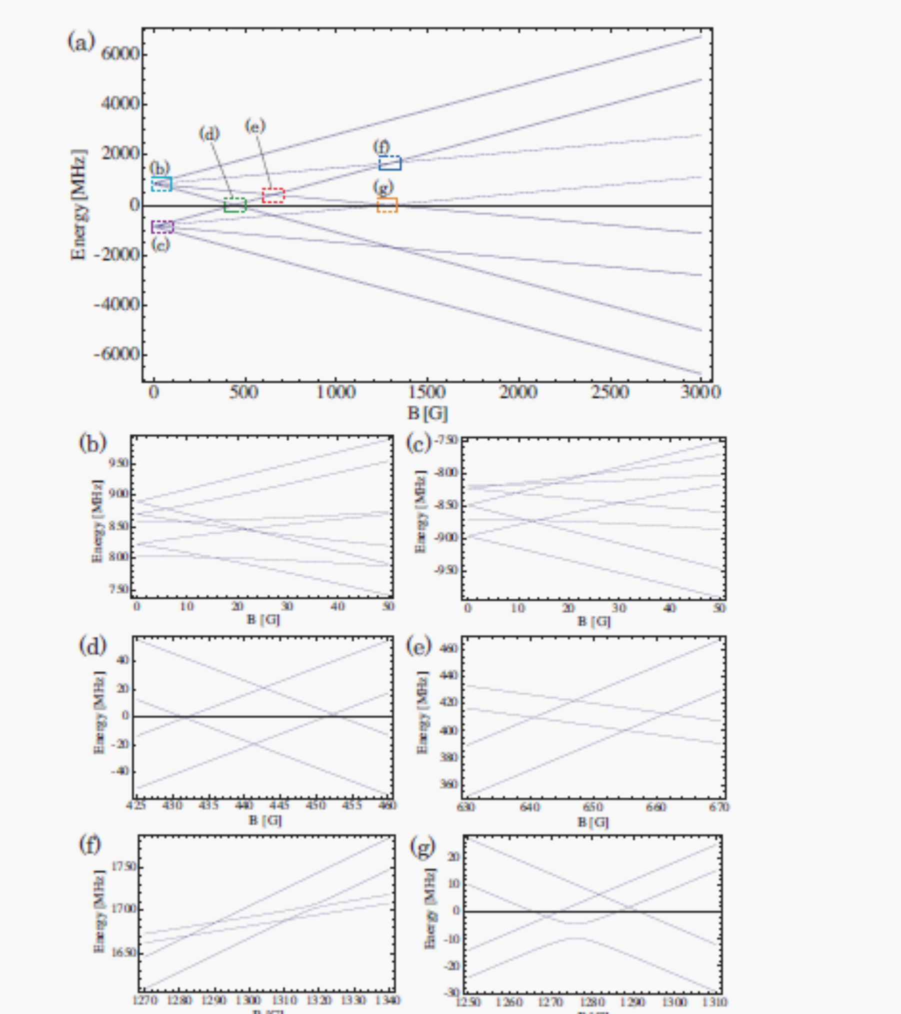
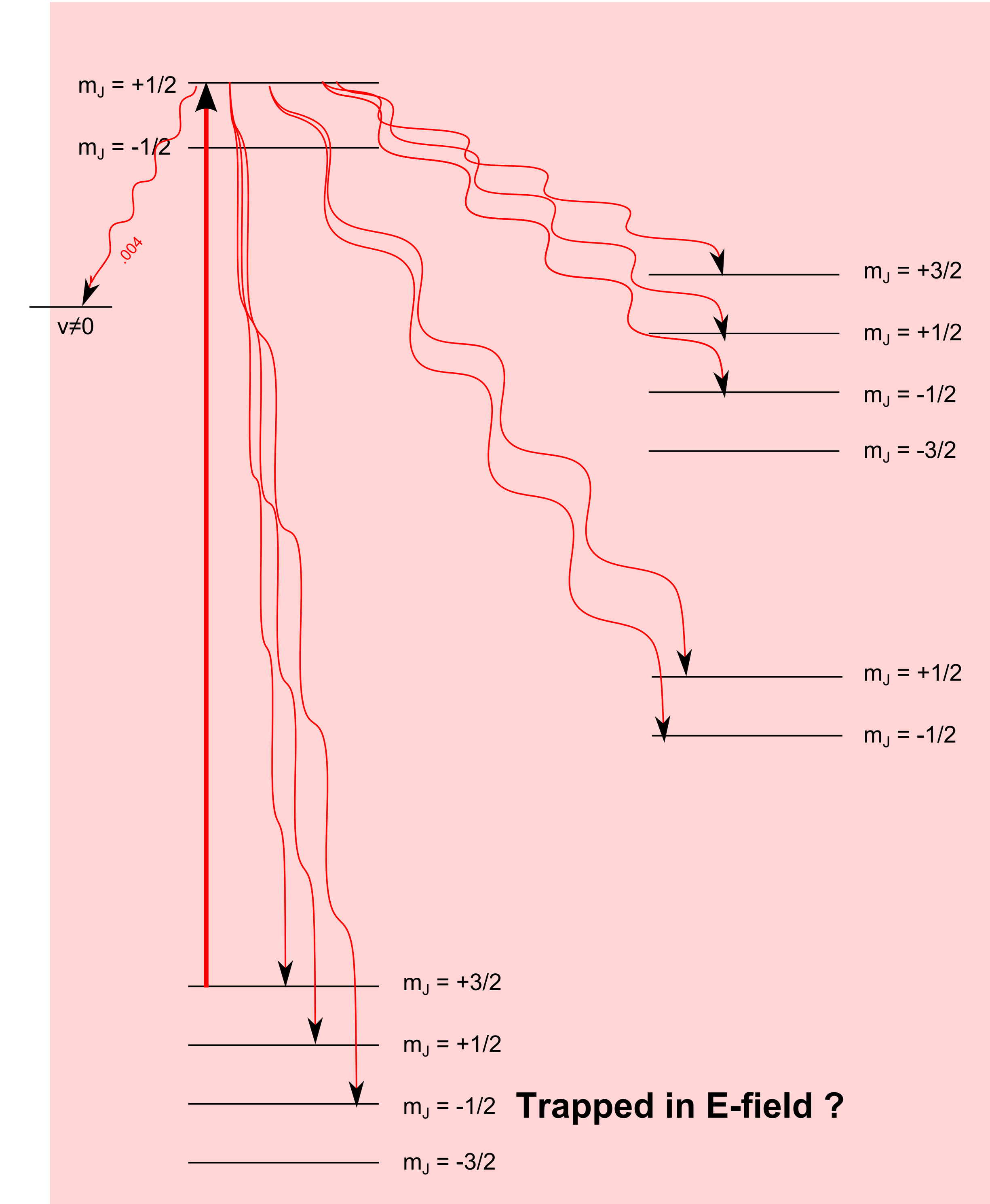


Figure 9. (a) The Zeeman effect for OH in the $v = 0$, $X^2\Pi_{3/2}$, $J = 3/2$ ground state, subject to a bias electric field with its strength $E_{DC} = 500$ V/cm and relative angle to the magnetic field $\theta_{BE} = 0°$. (b) The closeups of hyperfine structure for odd parity states (f-states) in zero field and (c) for even parity states (e-states). (d)-(g) show the level crossings between opposite parity states $|e; M_I = \pm1/2\rangle$ and $|f; M_I = \pm1/2\rangle$, similar to Figures 8(d)-(g); however, here level repulsions also appear in (f) and (g) due to the Stark effect and hyperfine interactions.



check for inverting gfactors?

CG coeeficients?