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(0,0) band of the [15.3]Ω=3/2 - $^2\Pi_{3/2}$ electronic transition of PtF by ILS

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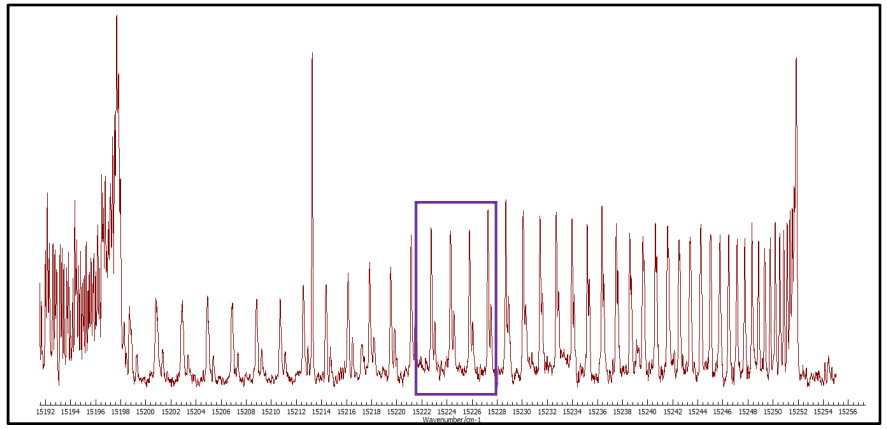
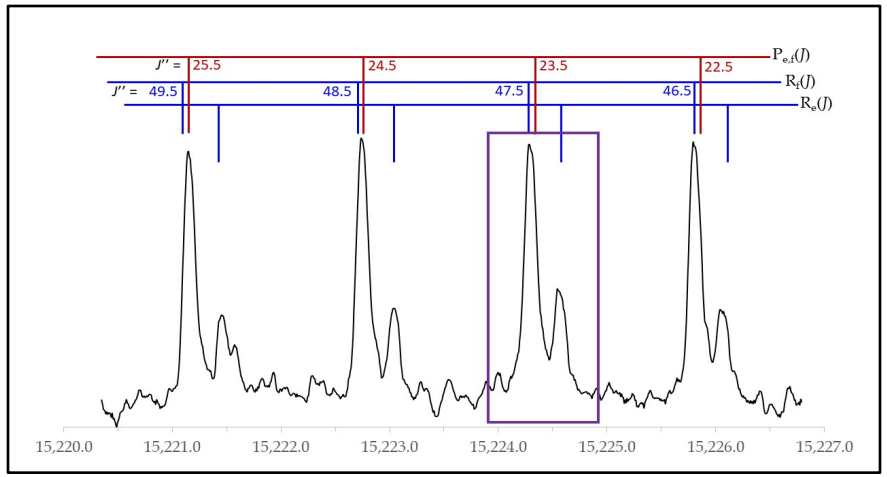
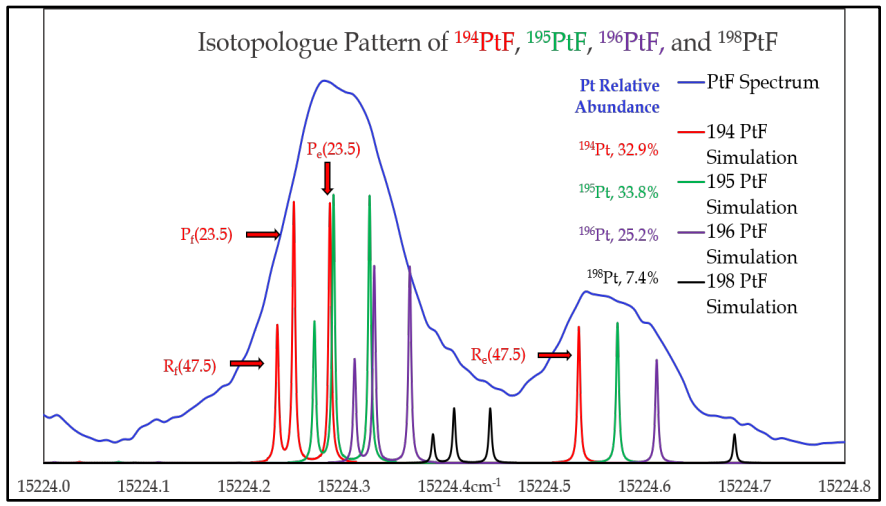
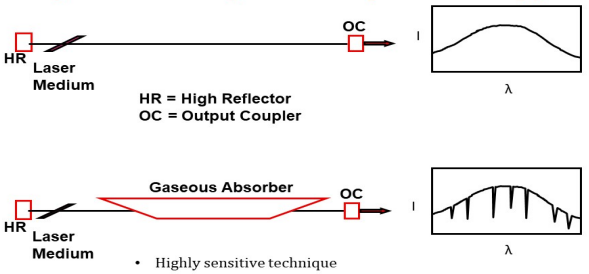




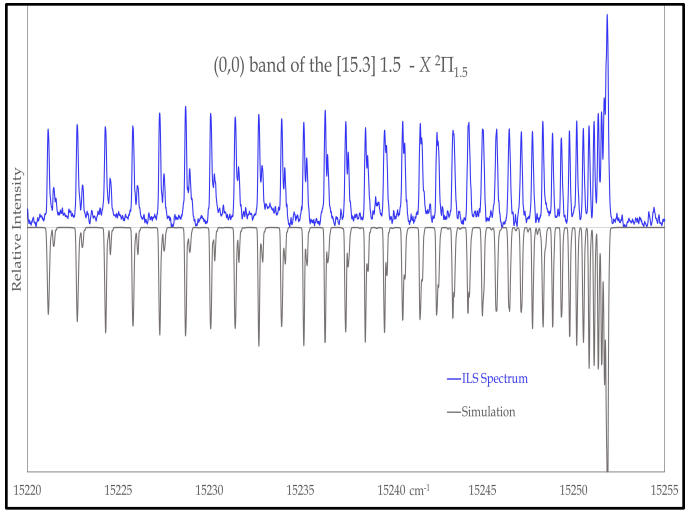


Measuring Absorption by Intracavity Laser Spectroscopy



- Highly sensitive technique
- Equivalent to a multi-pass cell with thousands of passes
  - Typical experimental settings yield effective pathlength of 1-2 km

- Initially, a single P and R branch were observed
- *J*s assigned using Δ_2F values from ground state
- ^{194,195,196}PtF line positions measured assuming isotopic relationships
- *B*, *D*, and *H* values constrained in the fit to isotopic relationships; MW Data included in fit

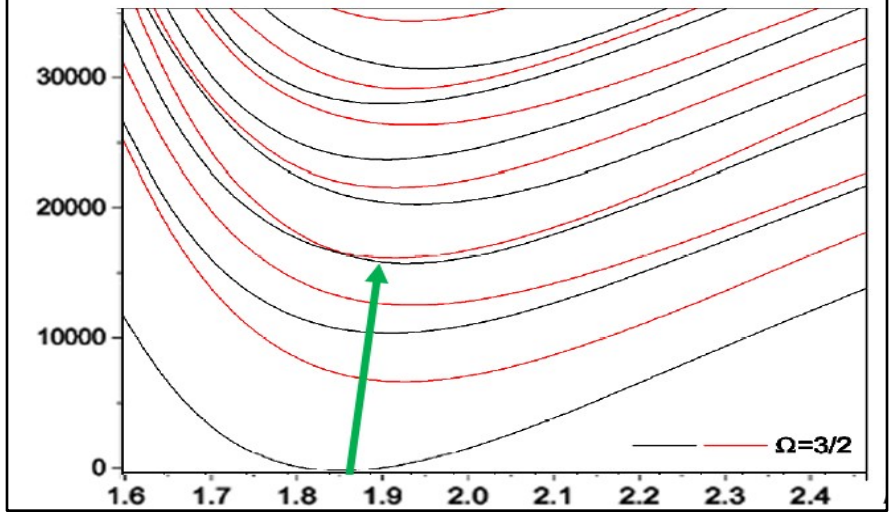


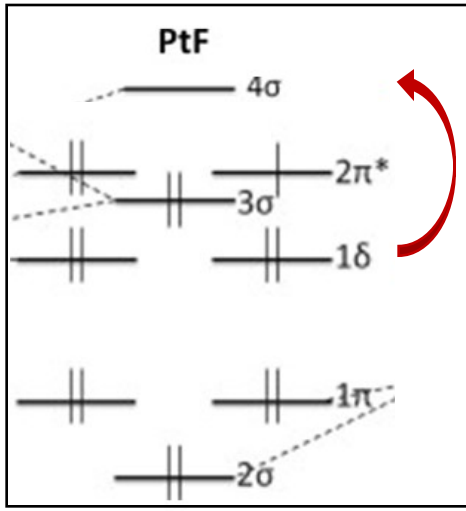
Molecular Constants for the [15.3]Ω=3/2 state of PtF (in cm^{-1}).

	Origin	B_0	$D_0 \times 10^7$	$H_0 \times 10^{12}$
^{195}PtF	15248.50568(72)	0.2559632(16)	2.4483(99)	2.28(18)

[a] B_0, D_0, and H_0 values constrained to isotopic relationship based on ^{195}PtF.

Ω states	T_e (cm^{-1})	R_e (Å)	ω_e (cm^{-1})	B_e (cm^{-1})
(5)3/2	15687	1.947	603.9	0.2568
(6)3/2	16103	1.929	598.4	0.2618





(5)3/2 State:

- > 50% $^4\Pi + {}^4\Delta$, both from the 2nd ^{4}F state of Pt^+ with configuration of $\delta^3\sigma^2\pi^3$
- Our transition is consistent with the red arrow, δ → σ
- This explains the weak transition moment and no observable λ-doubling in the excited state