Characterization of the $A^2\Sigma^+$ state of SH/SD radicals by photodissociation spectroscopy

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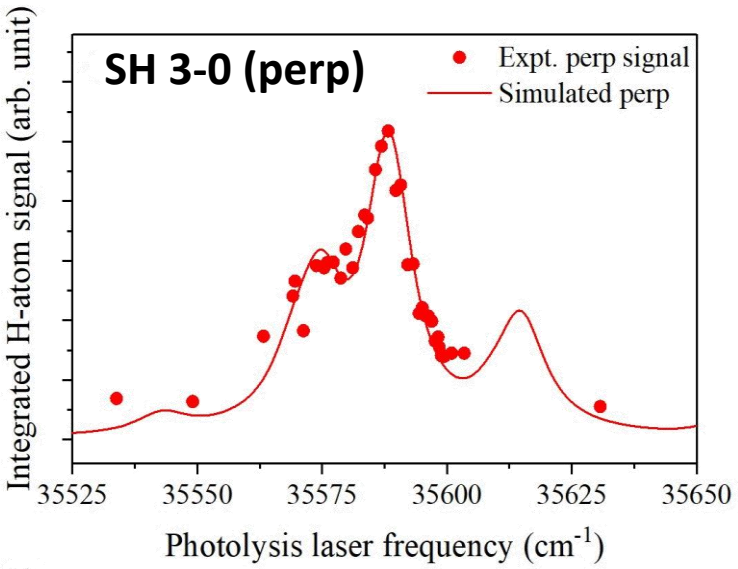
- Photofragment yield spectra (PFY): detect the H/D product from predissociation across SH/SD $A^2\Sigma^+ \leftarrow X^2\Pi$ bands.
- Detect the $A^2\Sigma^+$ levels (v'= 0-6 for SH, and v'= 0-8 for SD)
- Determine the E(v') and lifetime for some levels

$$SH(X^2\Pi) \xrightarrow{h\nu} SH^*(A^2\Sigma^+) \rightarrow H + S$$



	$A^2\Sigma^+$ lifetime	
v'	SH	SD
0		247±50 ns (N'= 1) 176±60 ns (N'= 2)
2		1.8±0.3 ps
3	0.53±0.05 ps	3.5±0.9 ps
4	0.55±0.1ps	0.9±0.2 ps
5	1.1±0.4 ps	1.5±0.3 ps
6	~1.0 ps	1.2±0.2 ps
8		2.1±0.4 ps