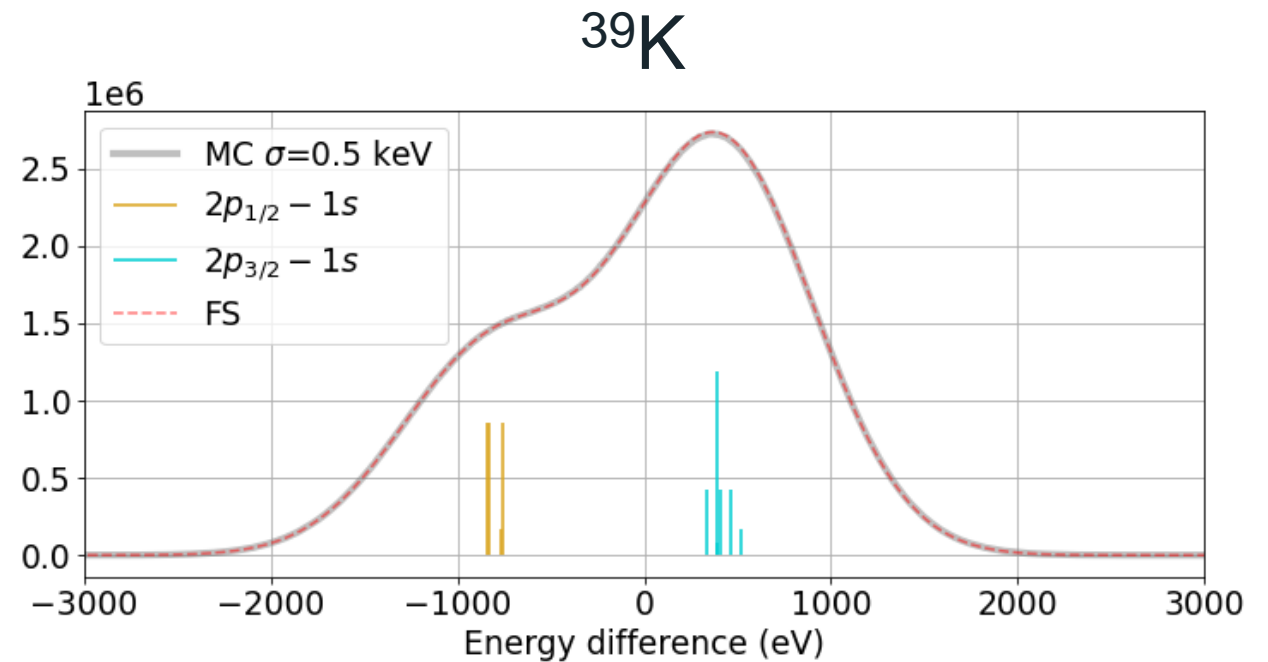


# Update muX meeting 06/09

Michael Heines

# Effect of hyperfine on 2p-1s extraction

- Underlying hyperfine remains unresolved
- What systematic do we induce by ignoring it
- Monte Carlo with calculations of HFS from Paul with Racah intensities



# Fitting with same methods

- Bayesian fit:

- $\mu = E_{2p_{3/2-1s}}$

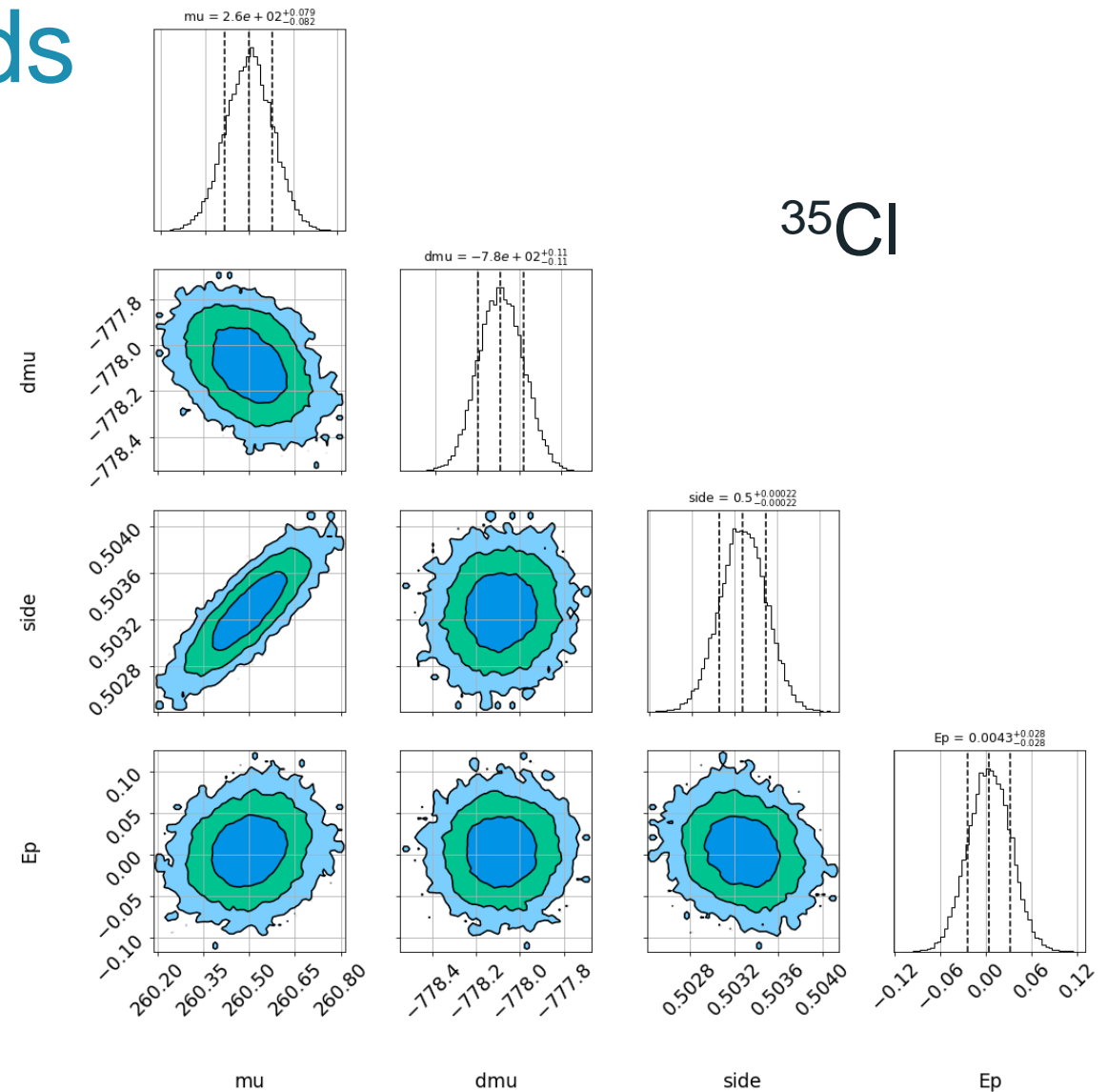
- $d\mu = E_{2p_{1/2-1s}} - E_{2p_{3/2-1s}}$

- $side = \frac{I_{2p_{1/2-1s}}}{I_{2p_{3/2-1s}}}$

- $E_p = \frac{E_{2p_{3/2-1s}} + side \times E_{2p_{1/2-1s}}}{1 + side}$

- Is  $E_p$  affected by HFS?

<sup>35</sup>Cl



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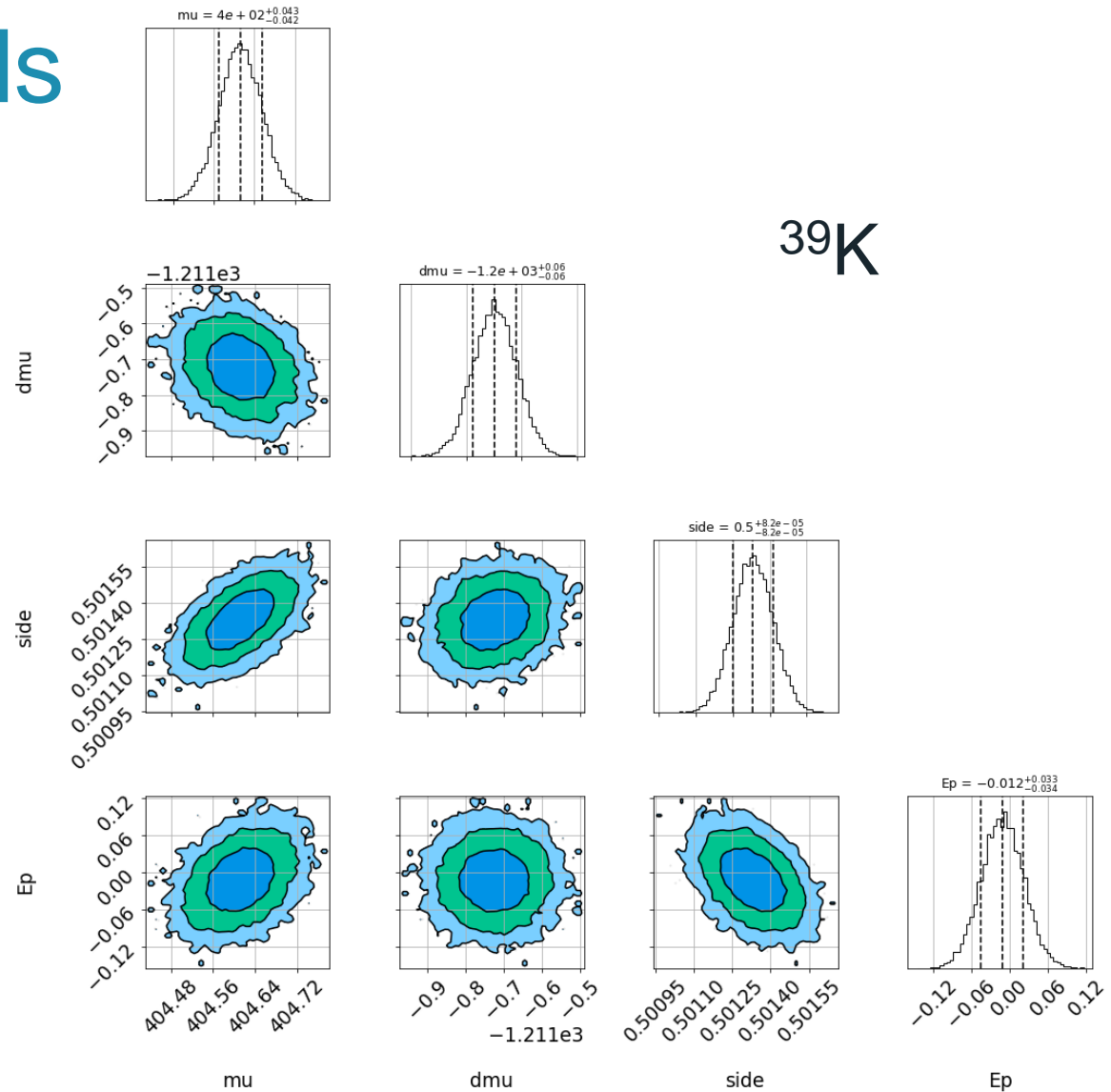
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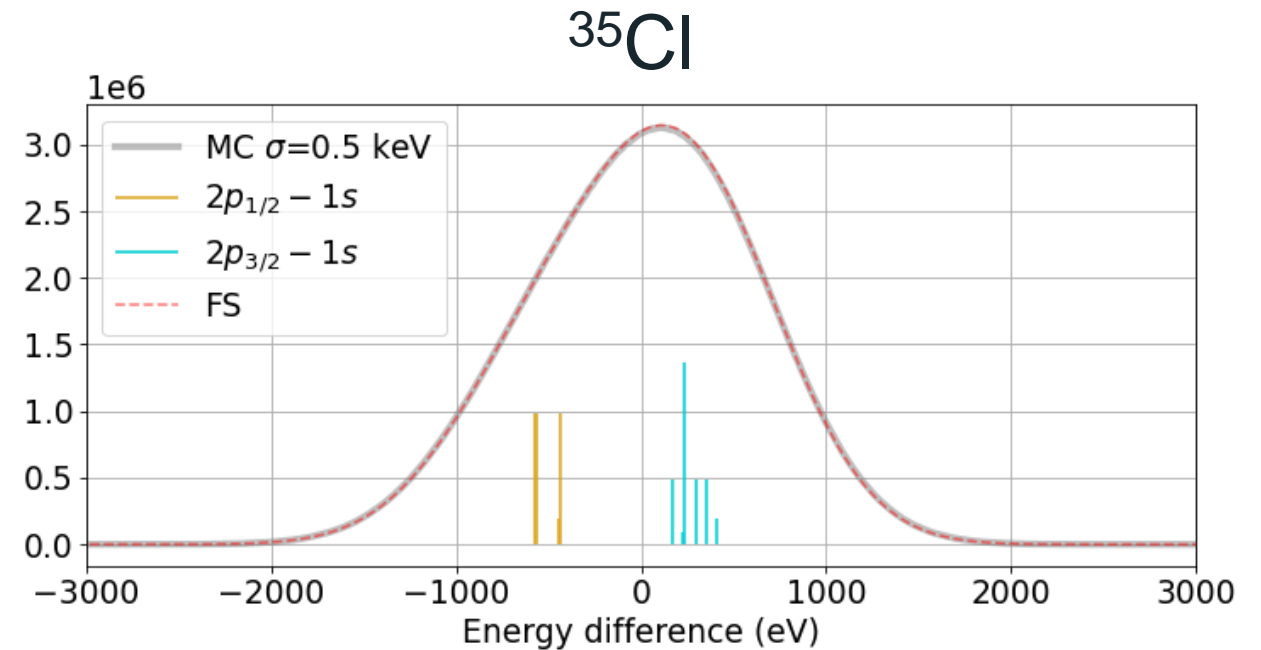
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# Table of deviations

Isotope	Deviation
$^{35}\text{Cl}$	+ 4(28) meV
$^{37}\text{Cl}$	+ 13(27) meV
$^{39}\text{K}$	- 12(33) meV
$^{40}\text{K}$	+ 14(34) meV
$^{41}\text{K}$	- 16(34) meV

Assuming  $\sigma = 0.5 \text{ keV}$ , most detectors have worse resolution  $\rightarrow$  Less effect due to HFS



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