



**PSI**

Center for Neutron and  
Muon Sciences

**53Mn**

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- Emilio has about 1.0 g of 53Mn, but mixed 1:100 with 55Mn
- Maybe some further enrichment is possible, but not enough to do germanium based spectroscopy
- QUARTET?

$A$	$E_{\text{exp}}$ [keV]	$E_{\text{theo}}$ [keV]	$N_{\text{pol}}$ [keV]	$c$ [fm]	$\langle r^2 \rangle_{\text{model}}^{1/2}$ [fm]	$\alpha$ [1/fm]	$k$	$C_z$ [ $10^{-3}$ fm/eV]	$R_{k\alpha}^{\mu}$ [fm]	Ref.
55	1172.854(34)	1172.854	0.364	4.0728(8)	3.706	0.0707	2.1136	-0.021	4.7525(7;23)	WSH81

# 2s-2p with QUARTET



- Katharina has done the muDirac calculations for the sensitivity
- We have about a factor 7 less sensitivity to the charge radius, but should be able to measure >10 times better
- Looks like this could work, but challenging: currently ~1% enrichment and ~1% 2s population...
- Other elements in this region, that could be interesting? Maybe we should also do a 55Mn test during QUARTET

