Isomers in ^{197,199}At and ^{203,205}Fr

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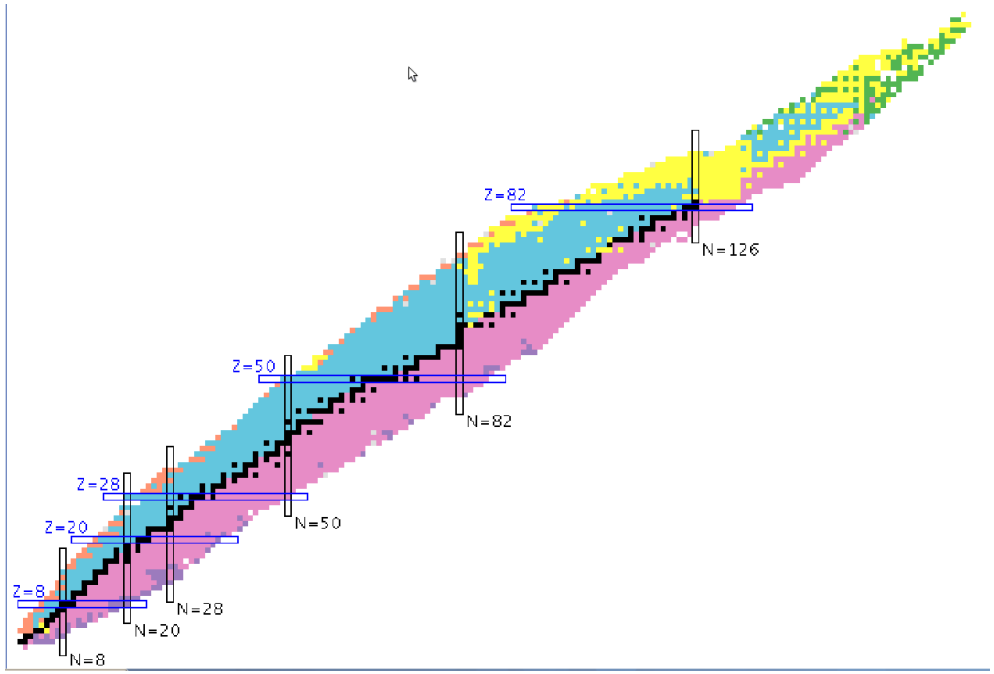
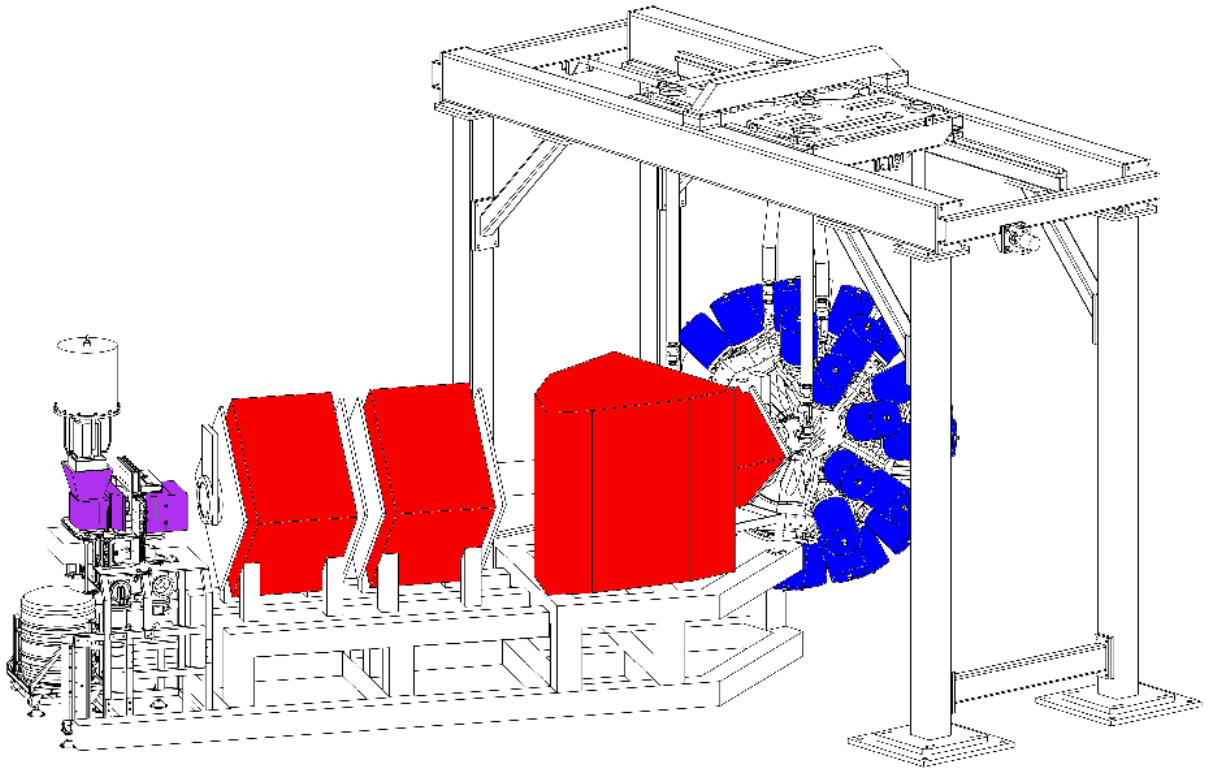
Outline

- The $13/2^+$ isomer in astatines
- A higher lying isomer in ^{199}At
- A $13/2^+$ isomer in ^{203}Fr and ^{205}Fr

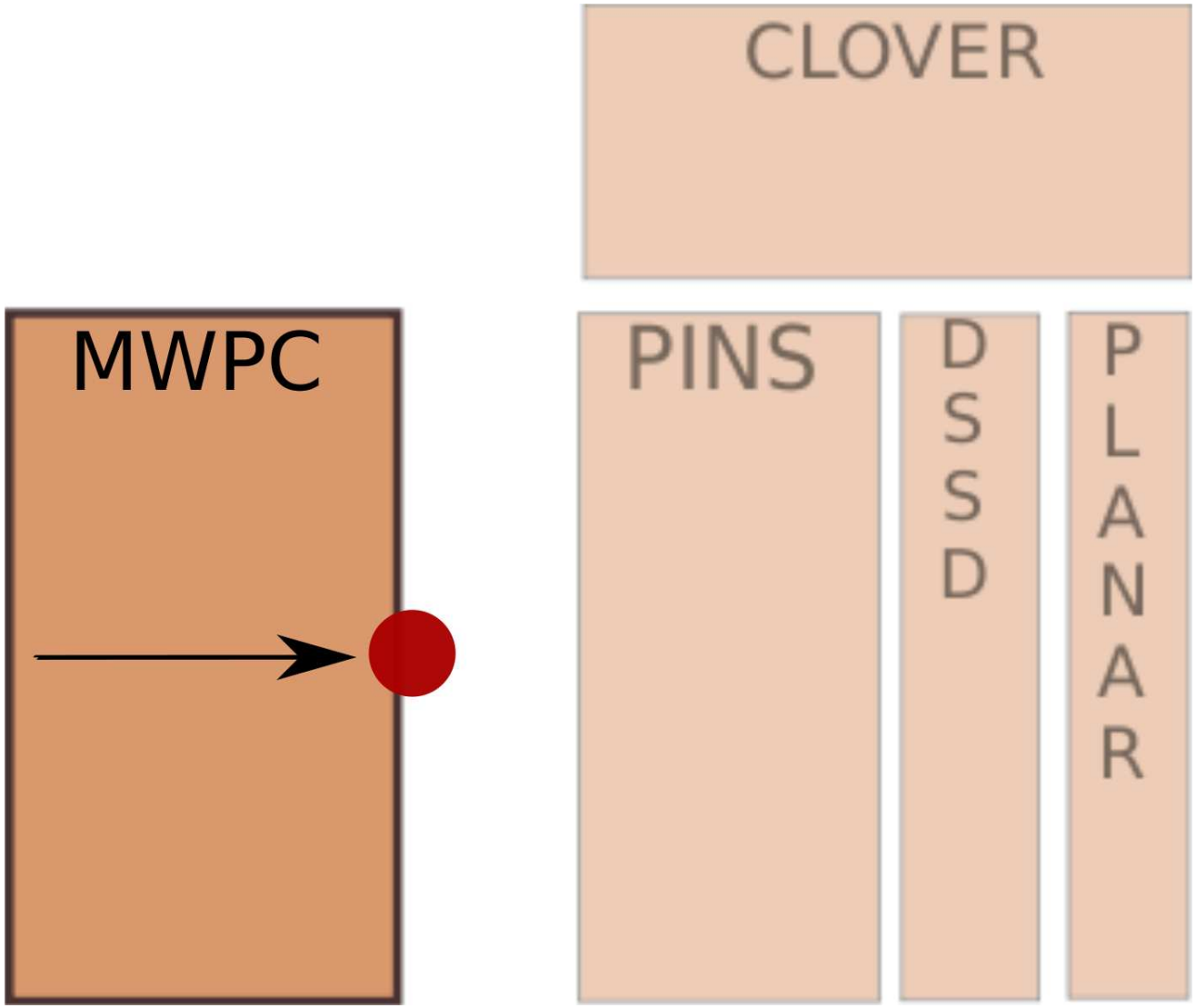


THE SETUP

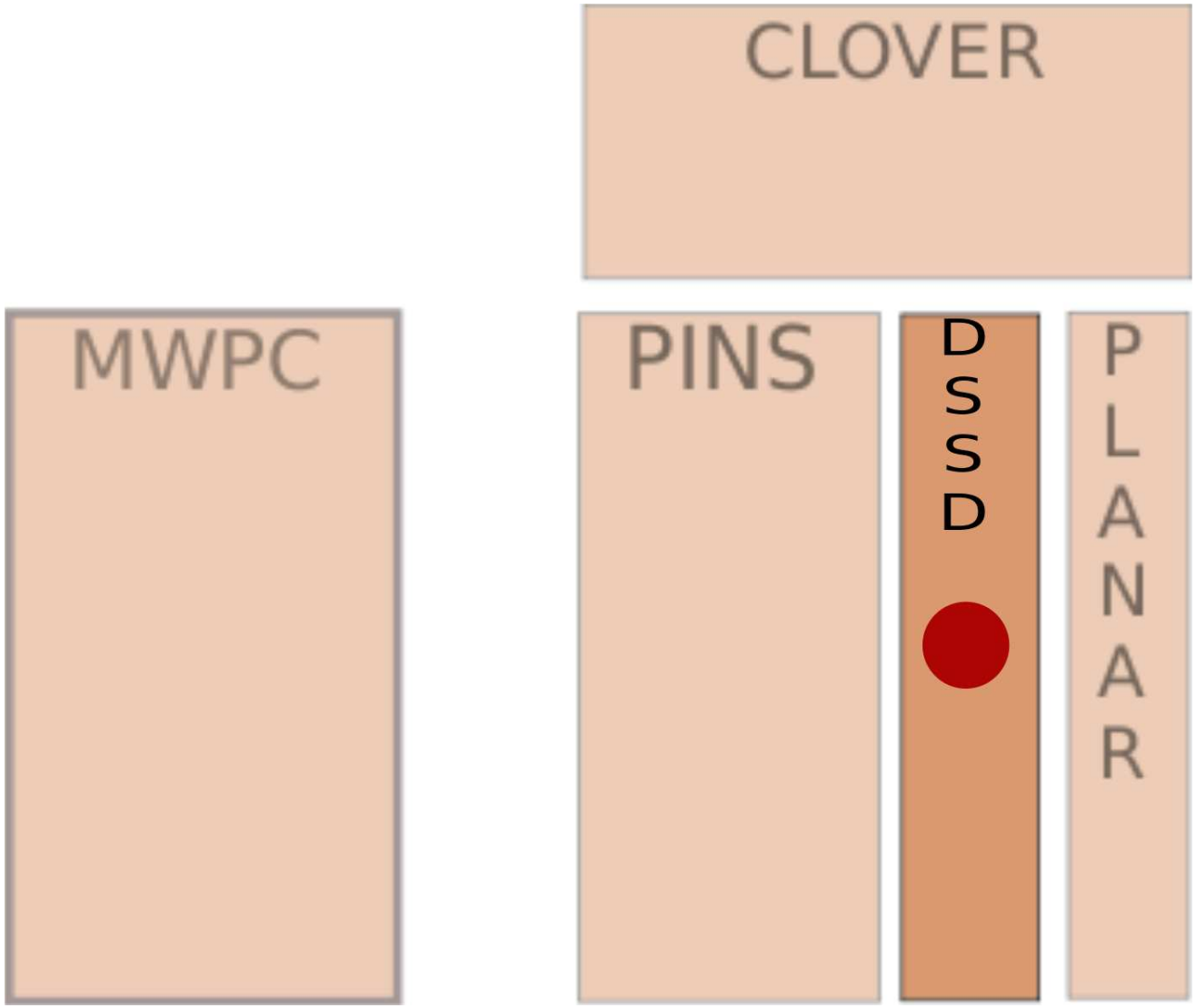


- **JUROGAM**: Detecting prompt gammas
- **RITU**: Separating fusion recoils from beam
- **GREAT**: Detecting the recoil and its alpha- and isomeric decays

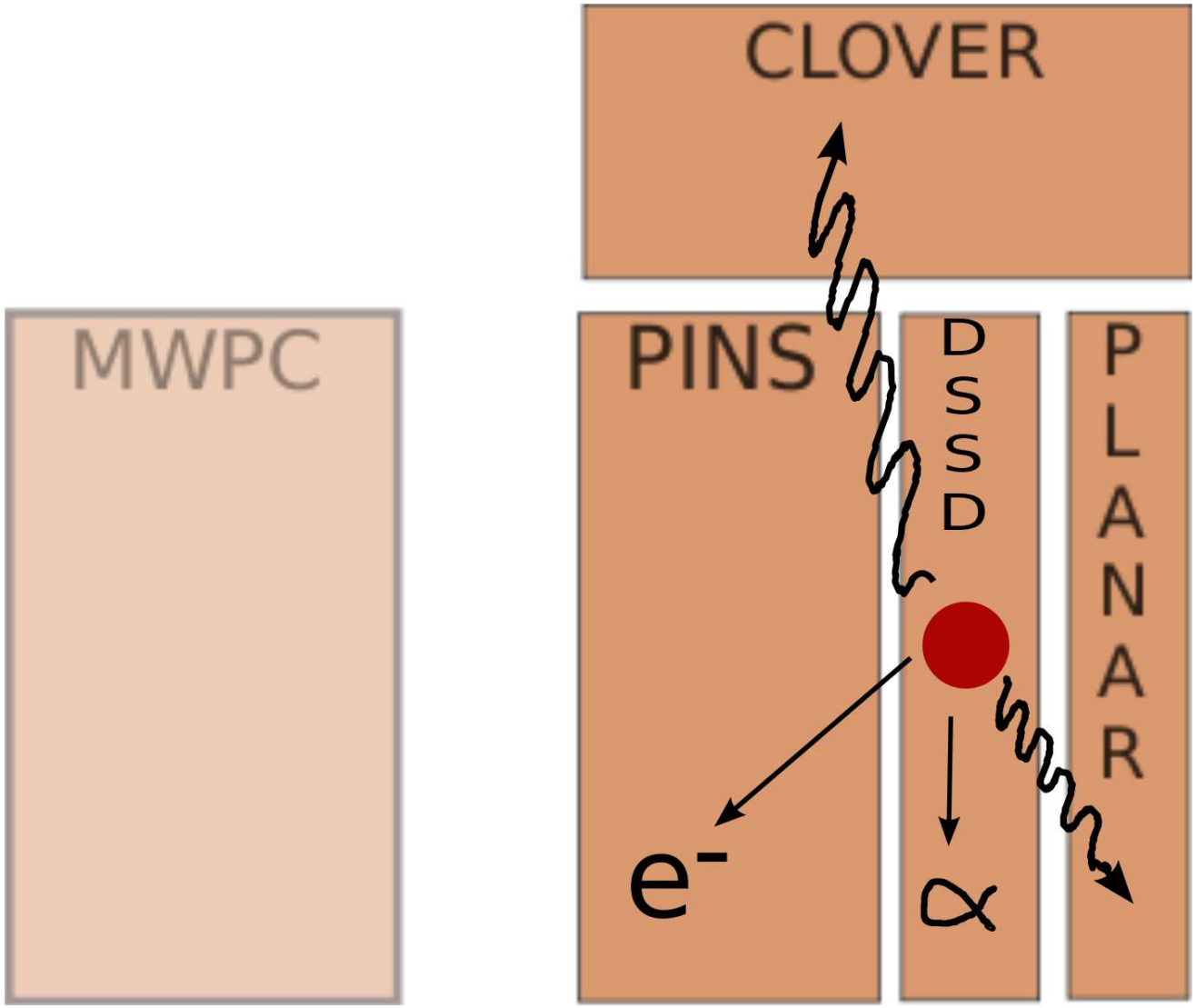
GREAT



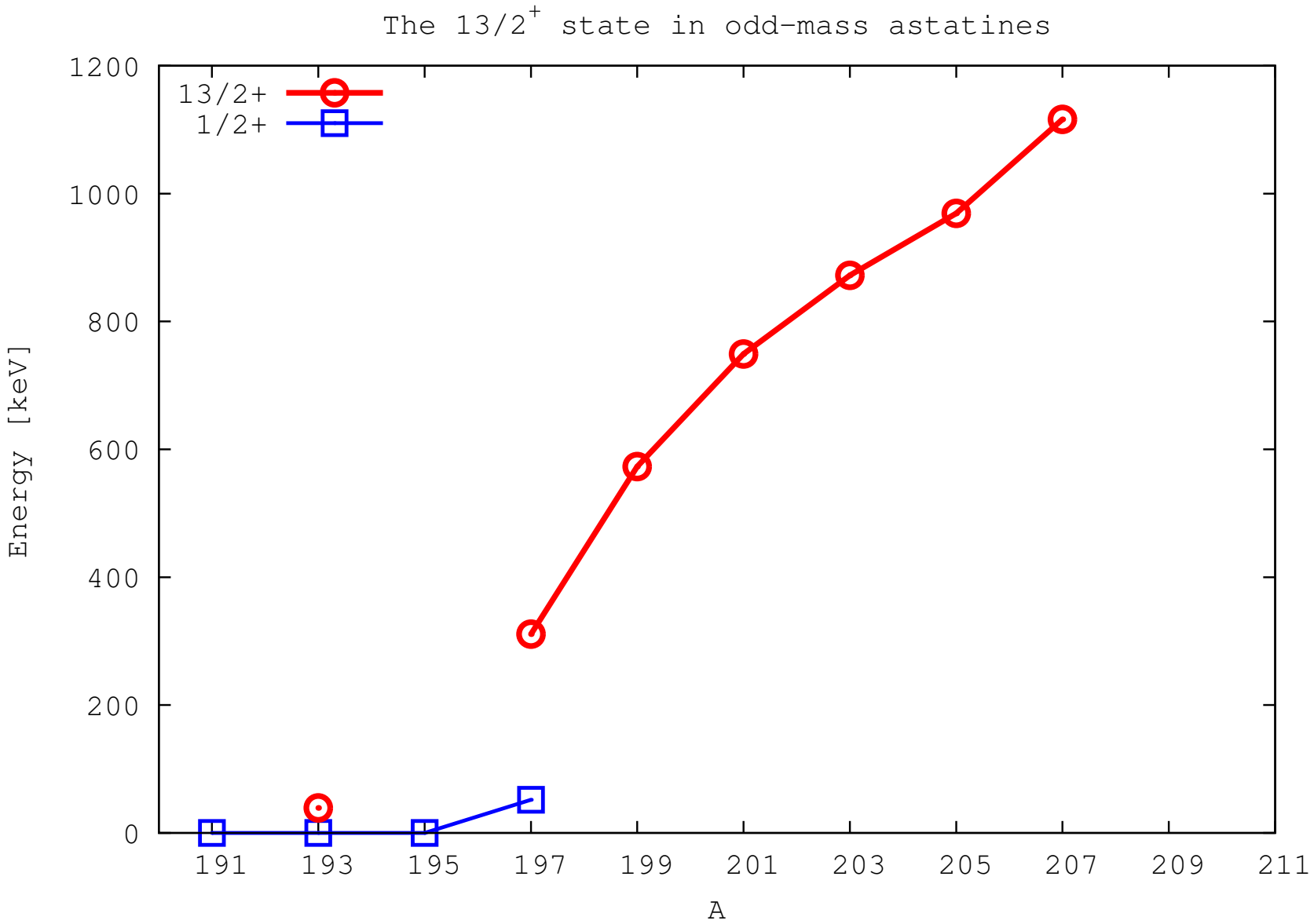
GREAT



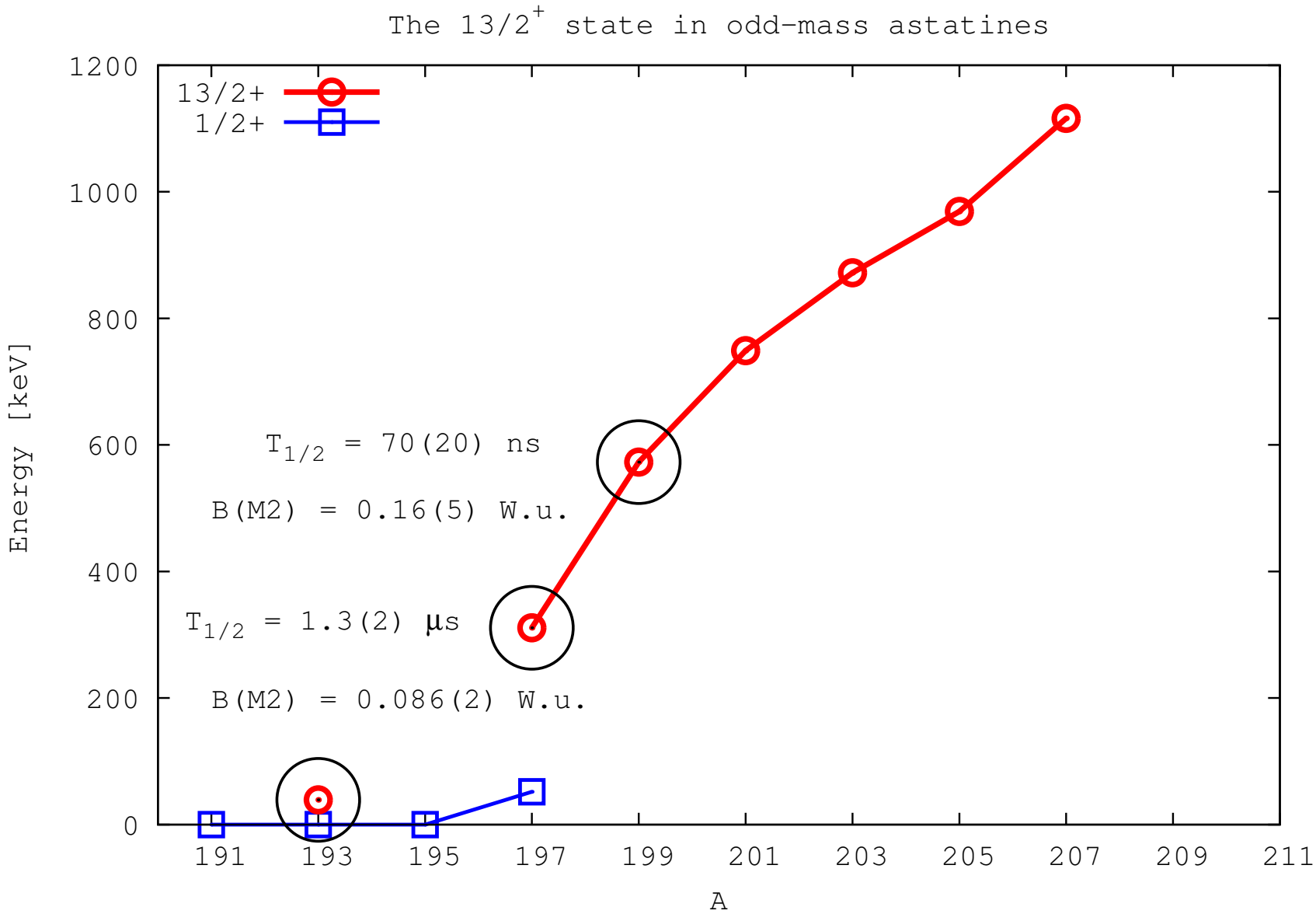
GREAT



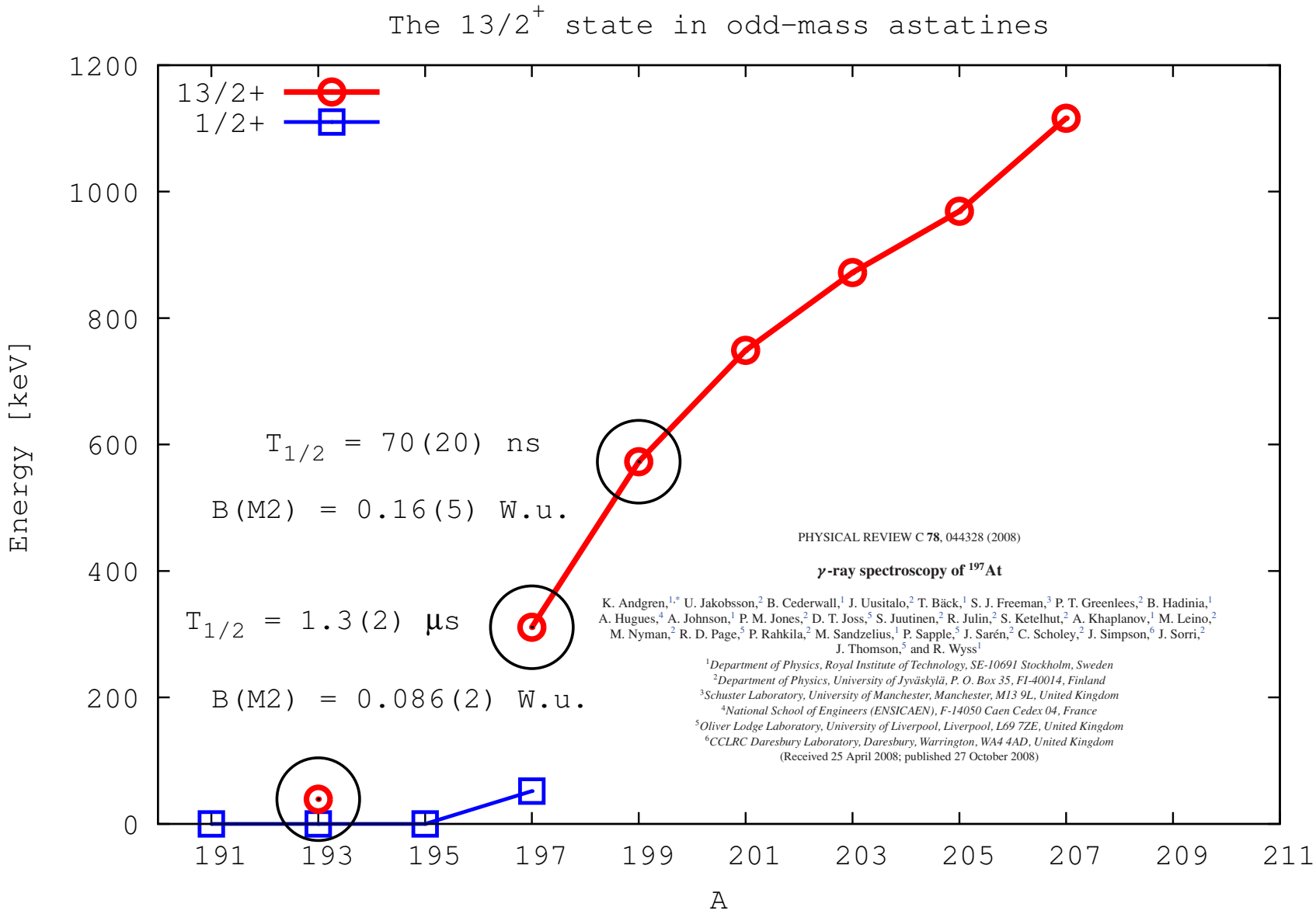
The 13/2+ state in odd-mass astatines



The 13/2+ state in odd-mass astatines



The 13/2+ state in odd-mass astatines



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γ-ray spectroscopy of ^{197}At

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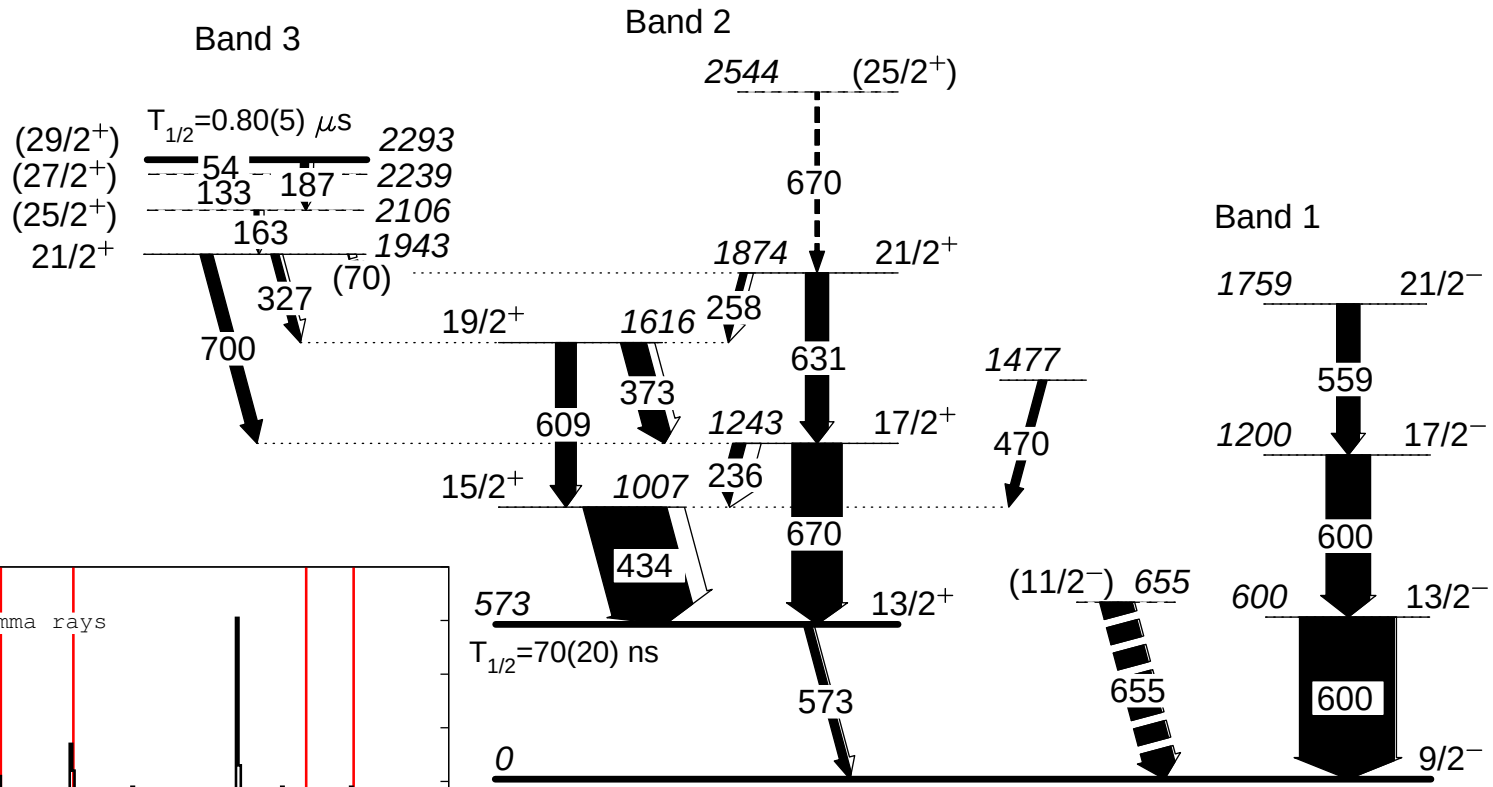
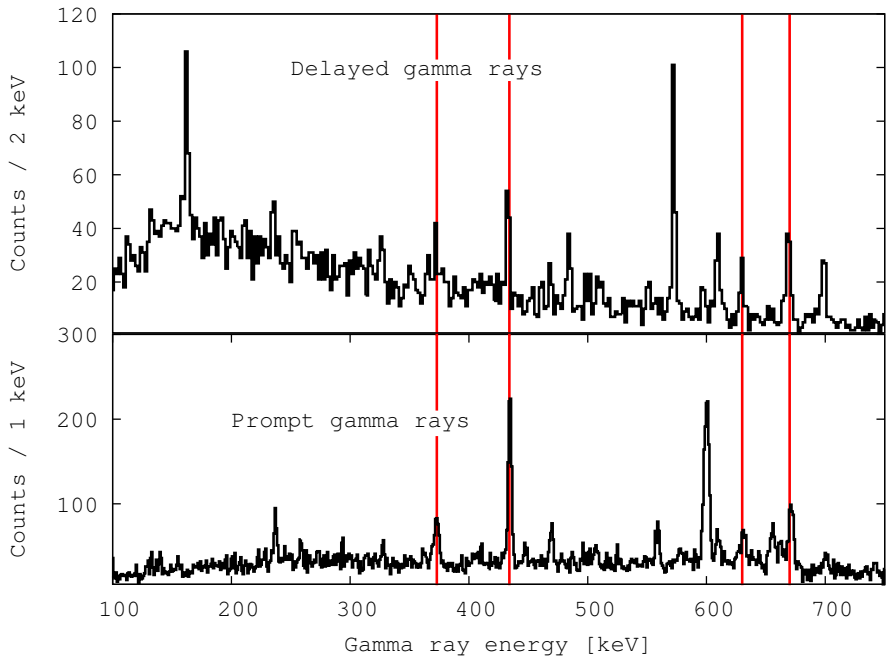
The $29/2^+$ isomer in ^{199}At



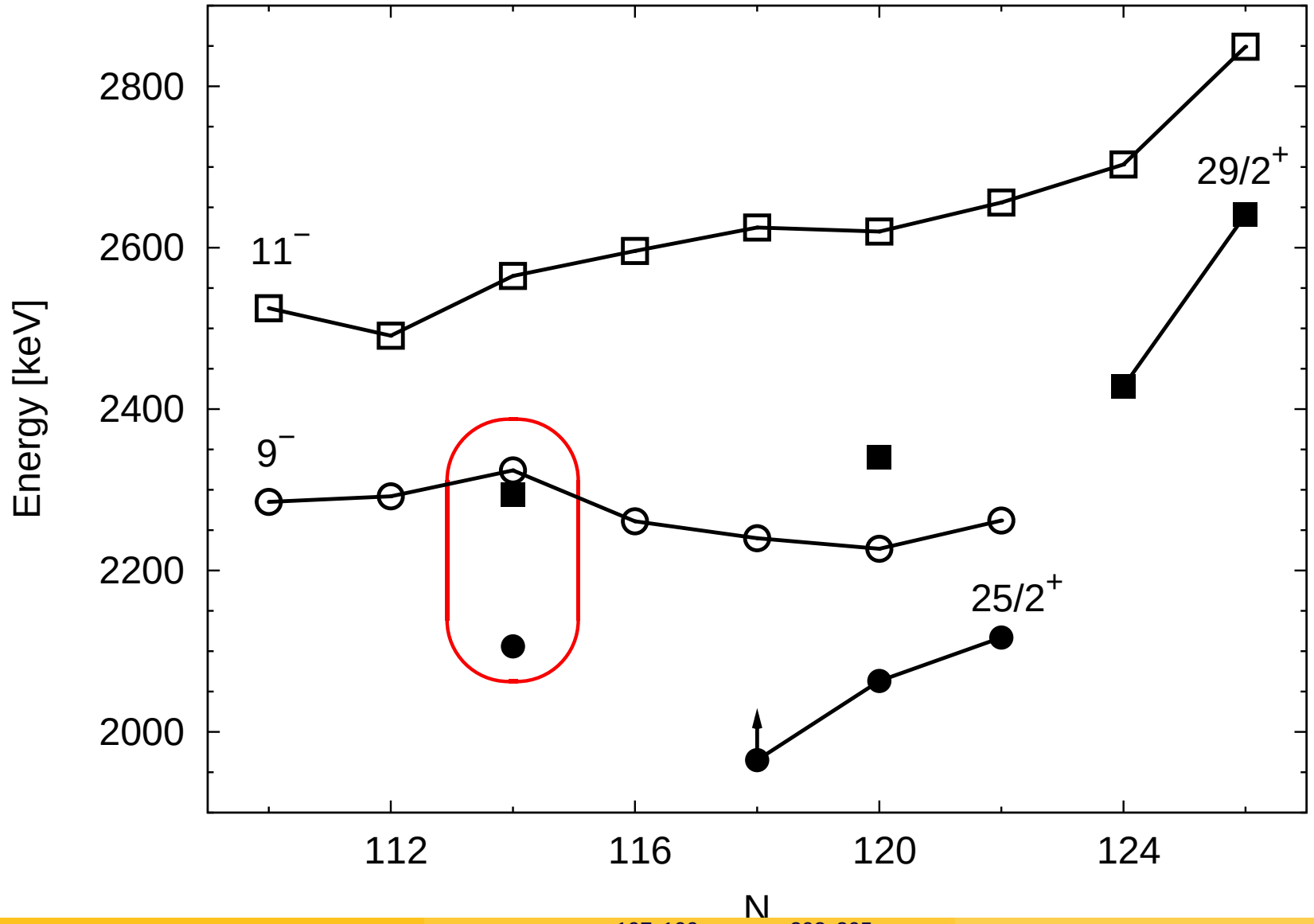


^{150}Sm(^{52}Cr,p2n)^{199}At

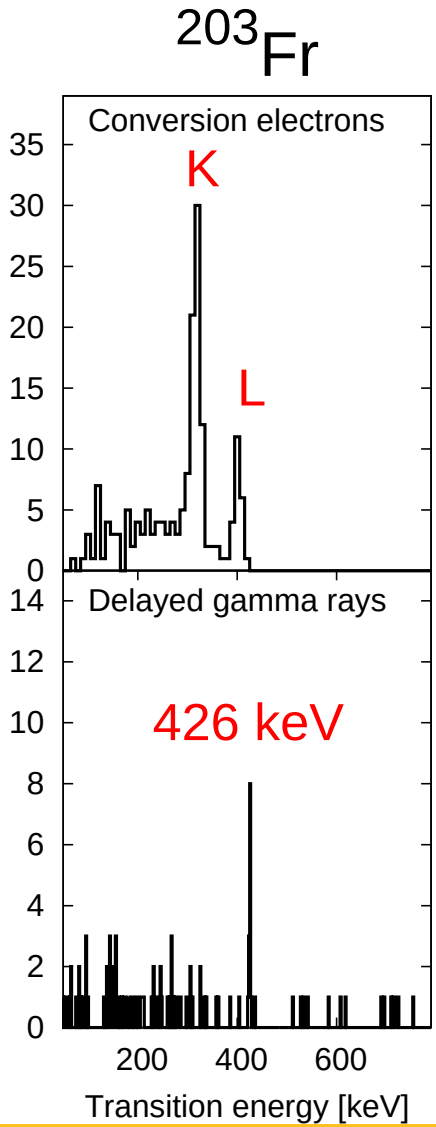
^{120}Sn(^{82}Kr,p2n)^{199}At

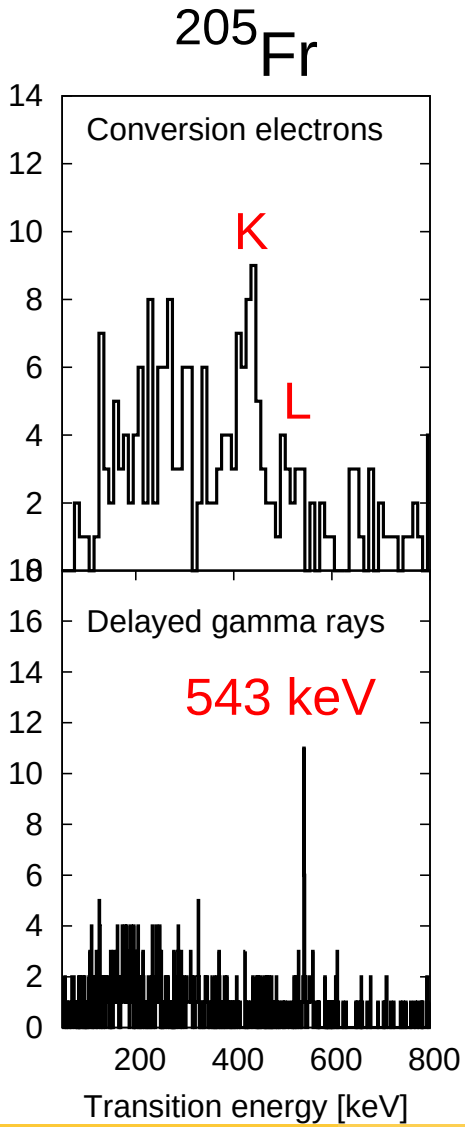
^{165}Ho(^{40}Ar,6n)^{199}At

The $29/2^+$ and $25/2^+$ isomers in astatines (comparison with polonium)

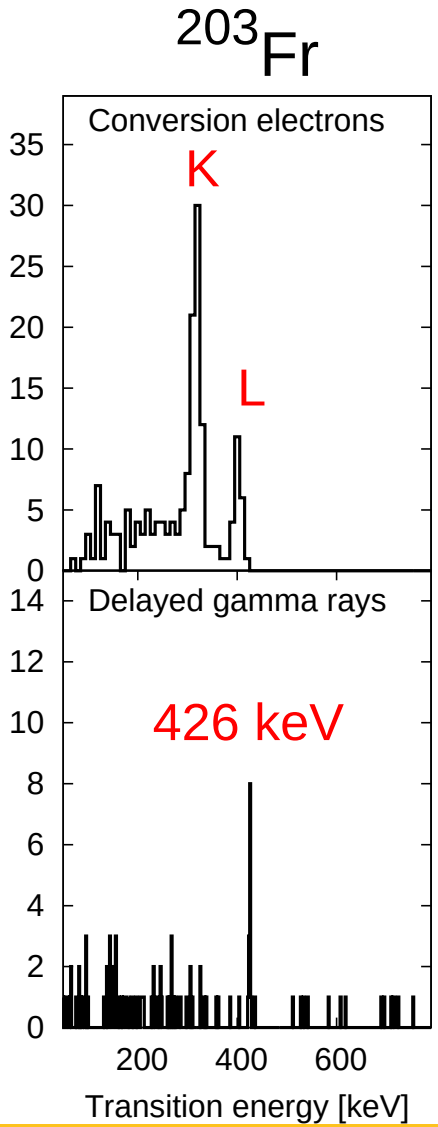


^{203}Fr and ^{205}Fr: The 13/2$^+$ isomer, VERY PRELIMINARY



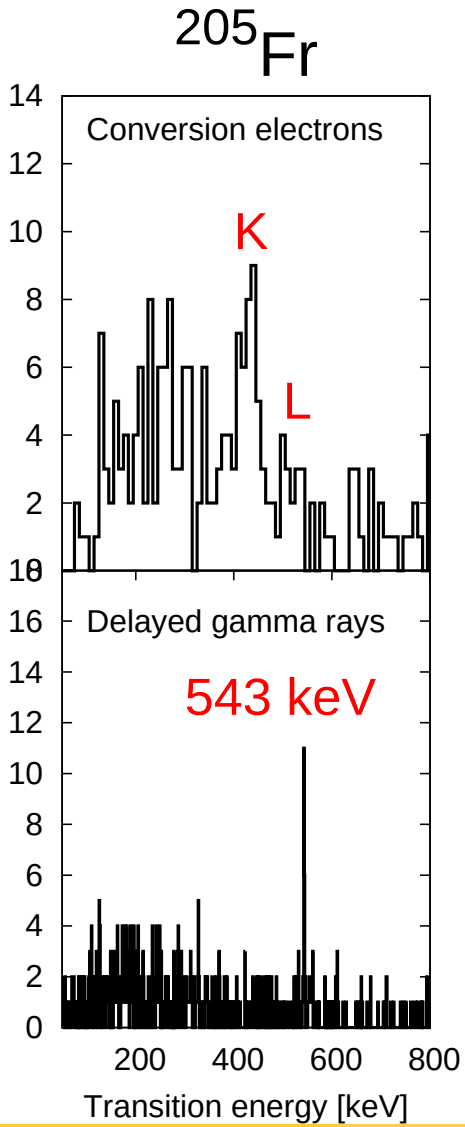


^{203}Fr and ^{205}Fr: The 13/2$^+$ isomer, VERY PRELIMINARY



$T_{1/2}$ = 300 ns

B(M2) = 0.12 W.u.



$T_{1/2}$ = 40 ns

B(M2) = 0.34 W.u.

THANK YOU!!

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