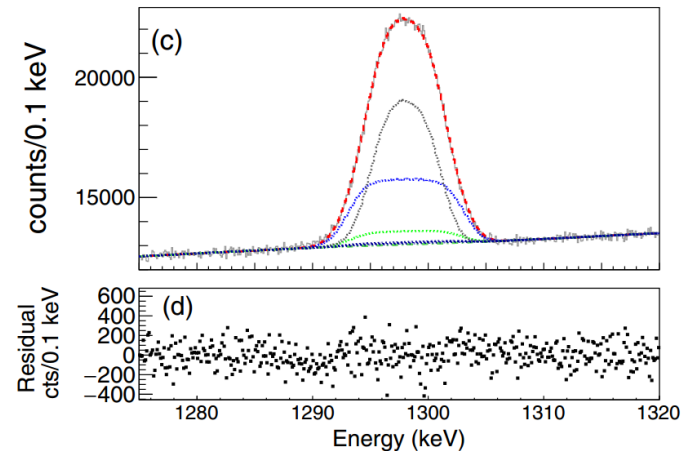
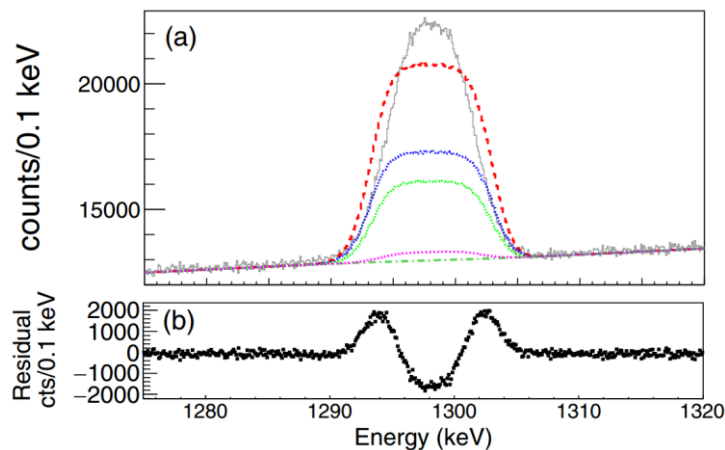


Doppler Broadening Technique

- H.O.U. Fynbo., Nucl. Instrum. Methods Phys. Res. B 207, 275 (2003). $^{11}\text{Li}(\beta n\gamma)^{10}\text{Be}$
- H.O.U. Fynbo *et al.*, Nucl. Phys. A 736, 39 (2004). $^{11}\text{Li}(\beta n\gamma)^{10}\text{Be}$
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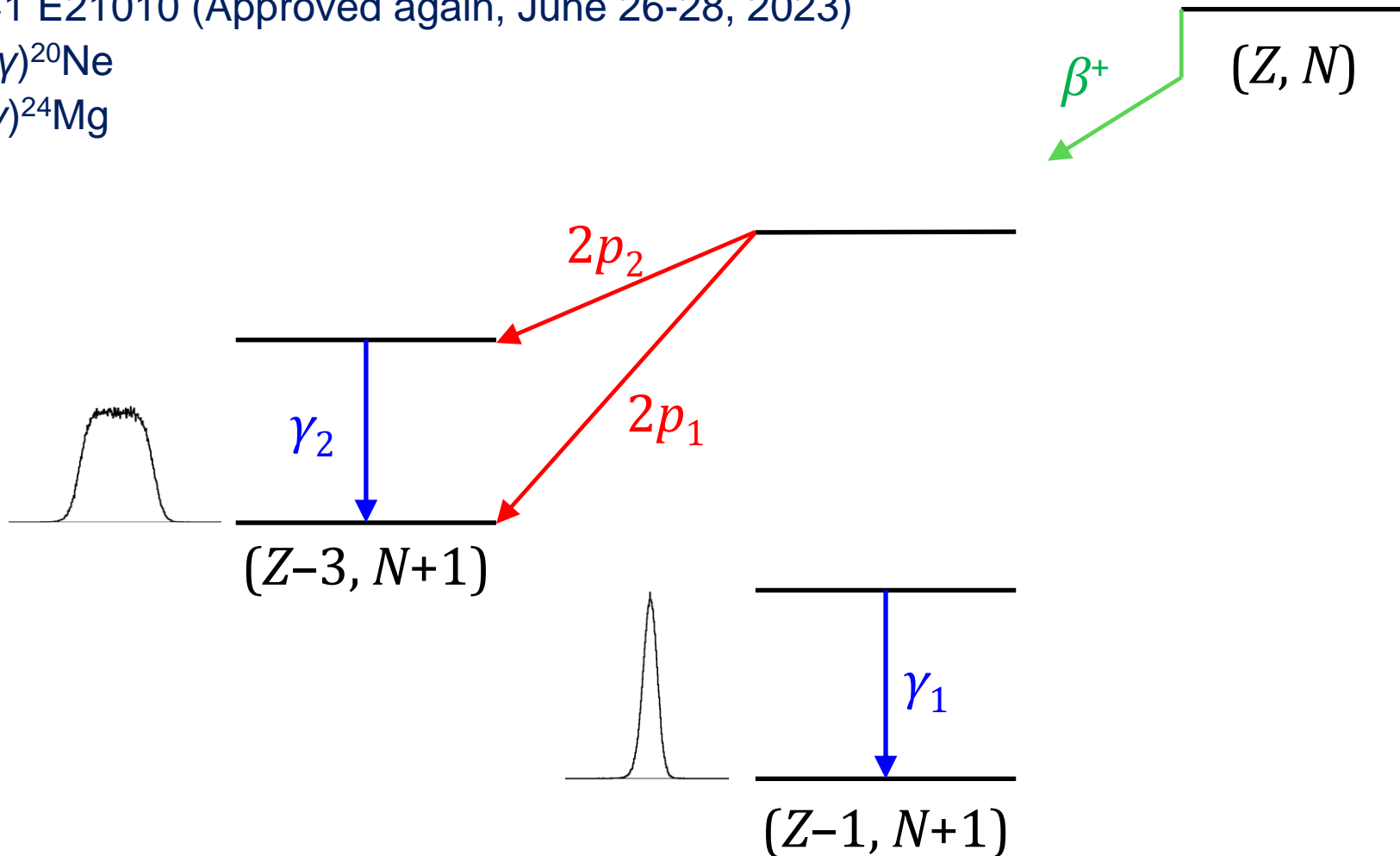
- S. B. Schwartz *et al.*, Phys. Rev. C 92, 031302(R) (2015). $^{26}\text{P}(\beta p\gamma)^{25}\text{Al}$
- B. E. Glassman *et al.*, Phys. Rev. C 99, 065801 (2019). $^{20}\text{Mg}(\beta p\gamma)^{19}\text{Ne}$
- L. J. Sun *et al.*, Phys. Rev. C 103, 014322 (2021). $^{25}\text{Si}(\beta p\gamma)^{24}\text{Mg}$



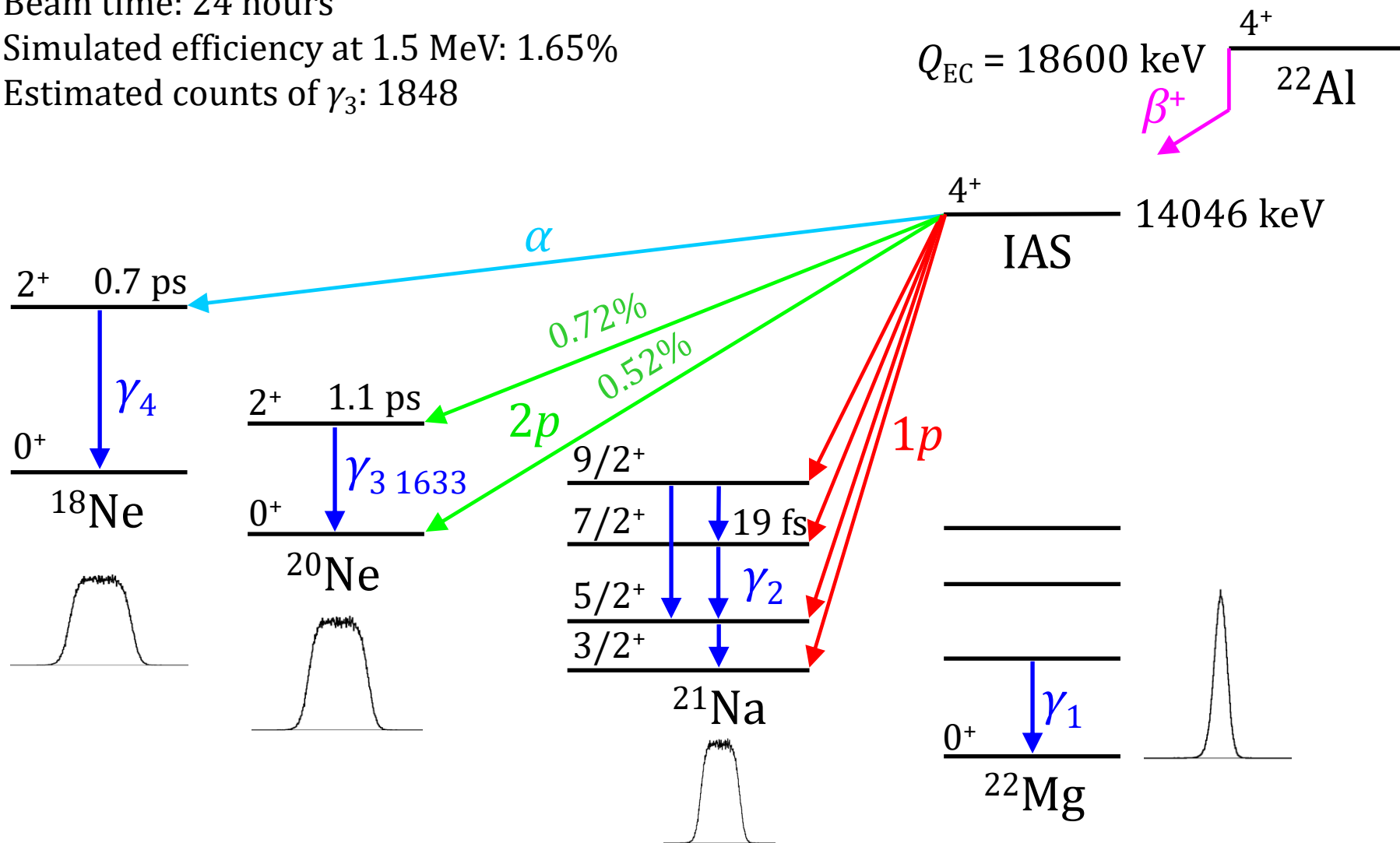
$^{20}\text{Mg}(\beta p\gamma)^{19}\text{Ne}$

Doppler Broadening Technique for $\beta 2p$

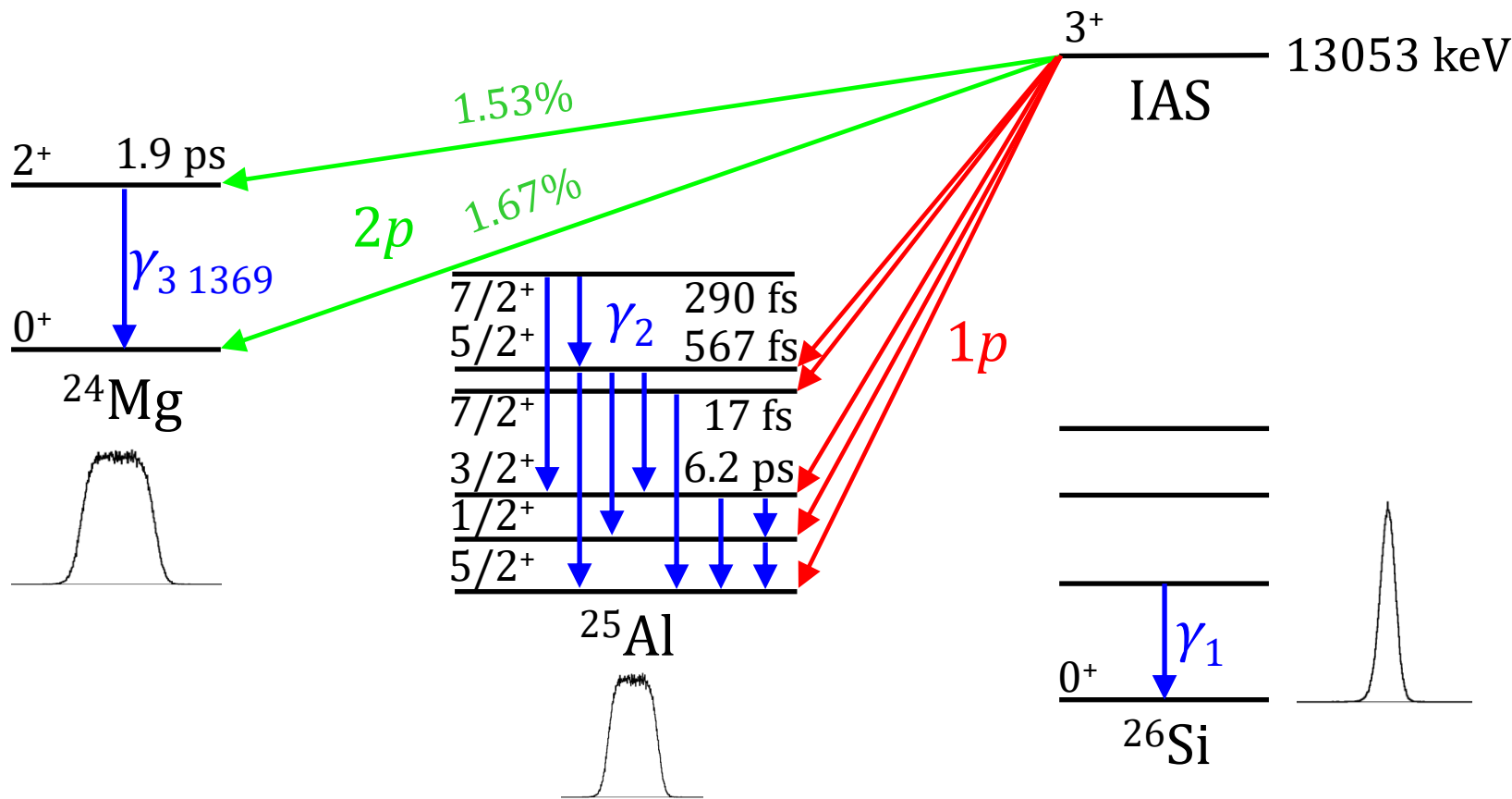
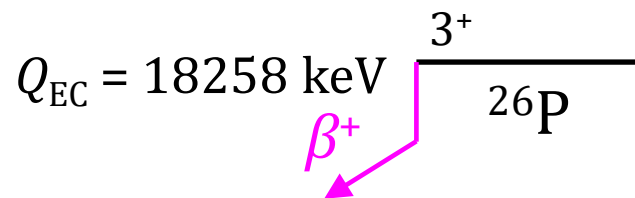
- NSCL PAC42 E18012 (Approved, canceled due to COVID)
- FRIB PAC1 E21010 (Approved again, June 26-28, 2023)
 - $^{22}\text{Al}(\beta 2p\gamma)^{20}\text{Ne}$
 - $^{26}\text{P}(\beta 2p\gamma)^{24}\text{Mg}$

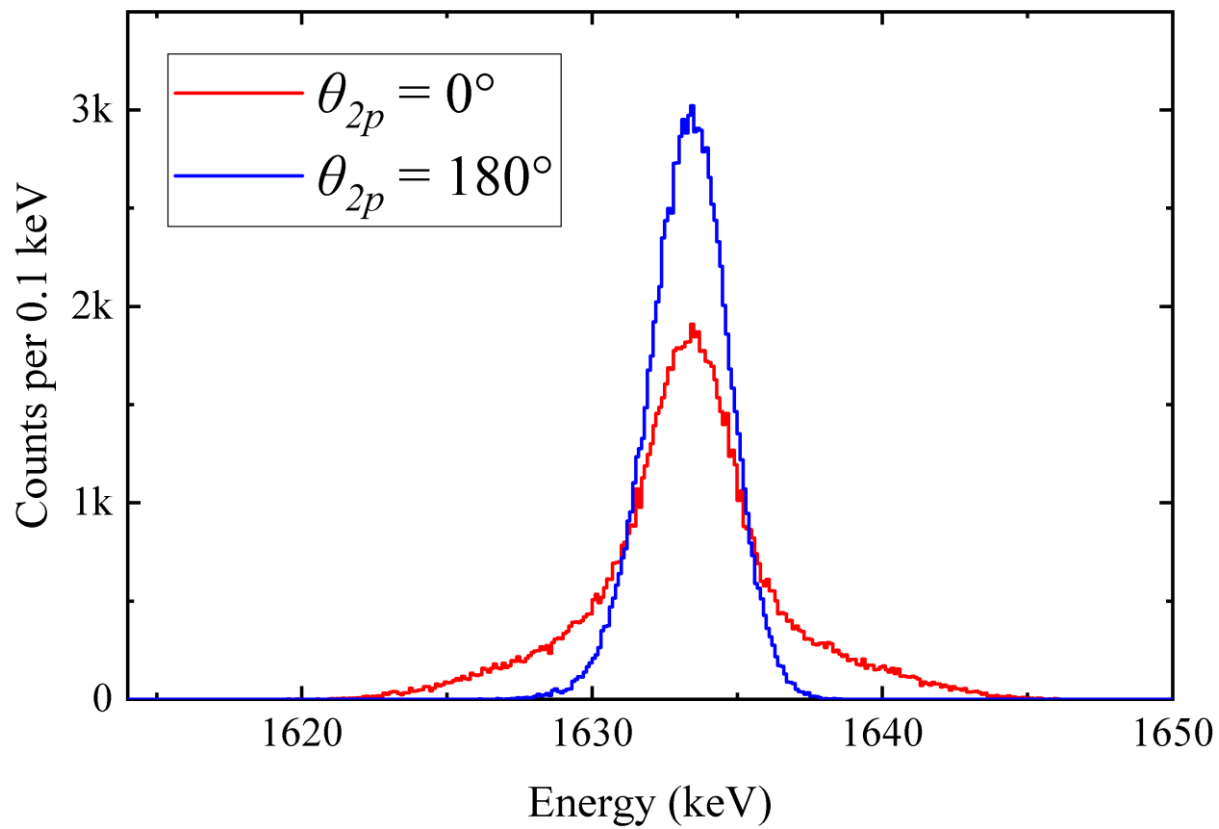


Proposed beam rate: 9000 pps
 Estimated beam rate: 180 pps
 Beam time: 24 hours
 Simulated efficiency at 1.5 MeV: 1.65%
 Estimated counts of γ_3 : 1848



Proposed beam rate: 5000 pps
 Estimated beam rate: 100 pps
 Beam time: 24 hours
 Simulated efficiency at 1.5 MeV: 1.65%
 Estimated counts of γ_3 : 2181





$^{22}\text{Al}(\beta 2p\gamma)^{20}\text{Ne}$ 1633-keV

