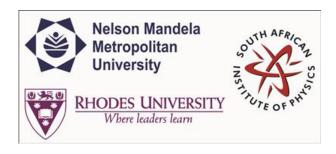
#### **SAIP2015**



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# Monte Carlo simulations to obtain the weak magnetism term for <sup>22</sup>Na beta decay

Wednesday, 1 July 2015 09:40 (20 minutes)

## Abstract content <br/> &nbsp; (Max 300 words)<br/> dref="http://events.saip.org.za/getFile.py/atarget="\_blank">Formatting &<br/>br>Special chars</a>

The study of  $\langle \sup 22 \langle \sup Na \rangle$  beta decay offers an opportunity to test the Standard Model via measurements of the  $\beta$ - $\gamma$  angular correlation. A previous measurement of this correlation yielded a non-zero value, indicating the need for a higher-order correlation to the decay, beyond the allowed V-A approximation. On assuming the Conserved Vector Current (CVC) hypothesis for weak interactions and using the magnetic dipole M1 width of the analog 2 $\langle \sup 1 \langle \sup \rangle -1 \langle \sup$ 

This talk describes an analysis of data obtained from a prior <sup>21</sup>Ne(p, $\gamma$ ) experiment to obtain the M1 width of the 2<sub>1</sub><sup>+</sup> state of interest in <sup>22</sup>Na. We aim to use the M1 width and an independent measurement of the  $\beta$ - $\gamma$  angular correlation to obtain a higher order Standard-Model-allowed weak magnetism term, in an attempt to explain the observed discrepancy mentioned above. I will also describe some Monte Carlo simulations performed to extract E2/M1 mixing ratio from these data.

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