

Inter-comparison of PIGE codes II: depth profiling

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Nuclear Data Section
IAEA



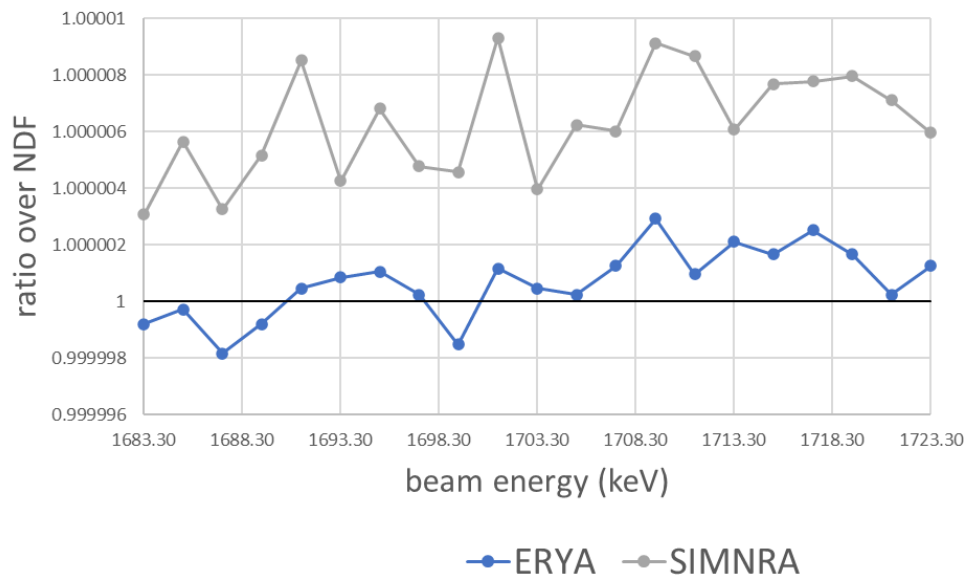
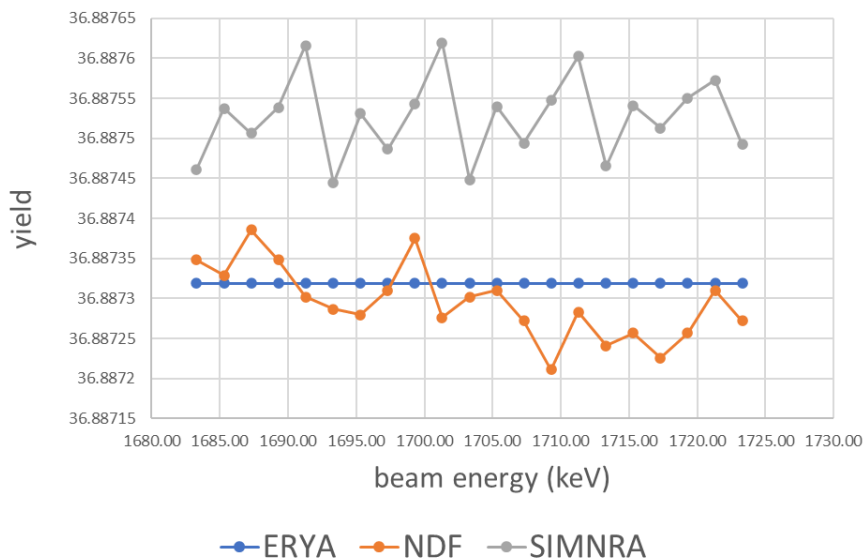
Summary

- Comparison includes:
 - Results of exercises 1-7; 4 cases each
 - Comparison with SPACES: Exercise 2; full straggling; 2 cases $\Delta E=0$ keV, 1 keV; energy bin 50 eV
 - Units: yields in counts/msr/uC; energy in keV
- Outstanding questions:
 - Uncertainty quantification: how?
 - End users/stakeholders needs

ROUND 1 OF INTER-COMPARISON

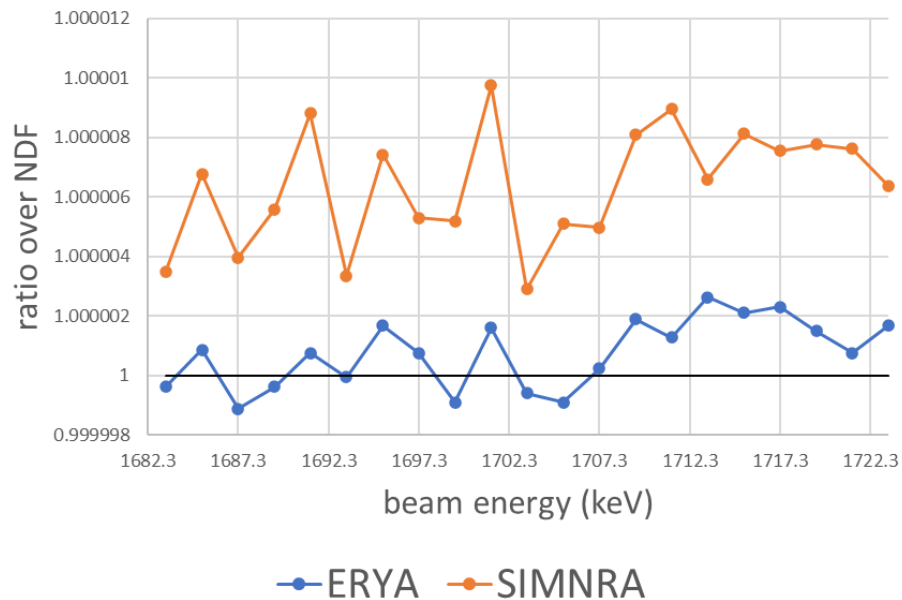
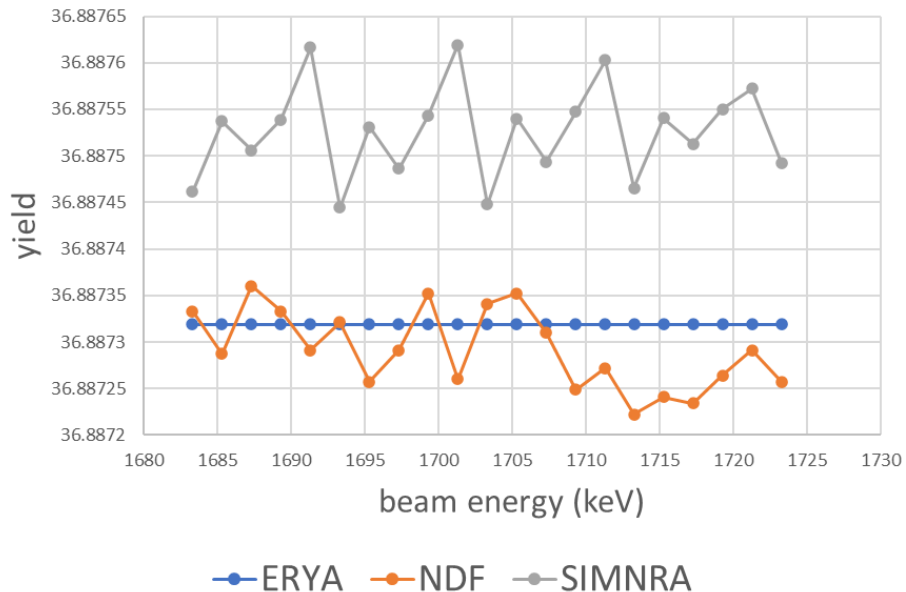
Exercise 1 – full straggling $\Delta E=0$

Ex 1 Full straggling $\Delta E=0$



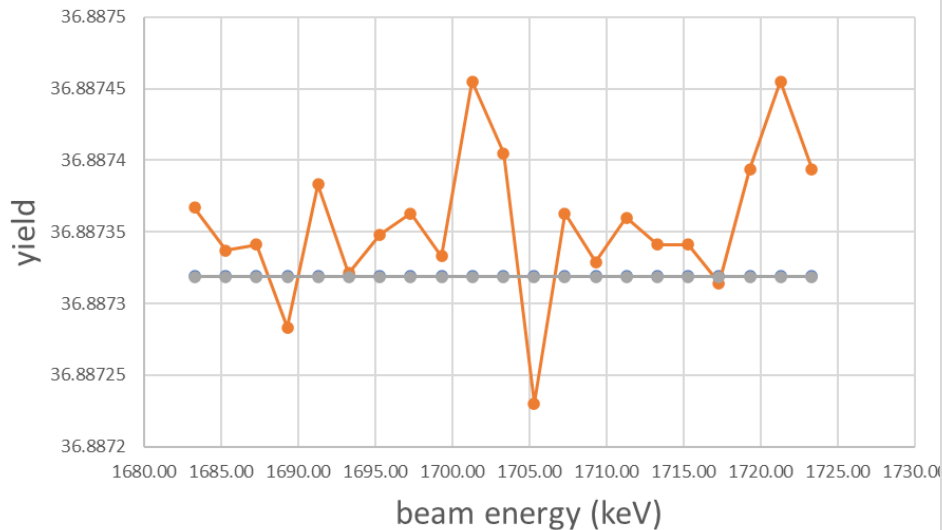
Exercise 1 – full straggling $\Delta E=1$

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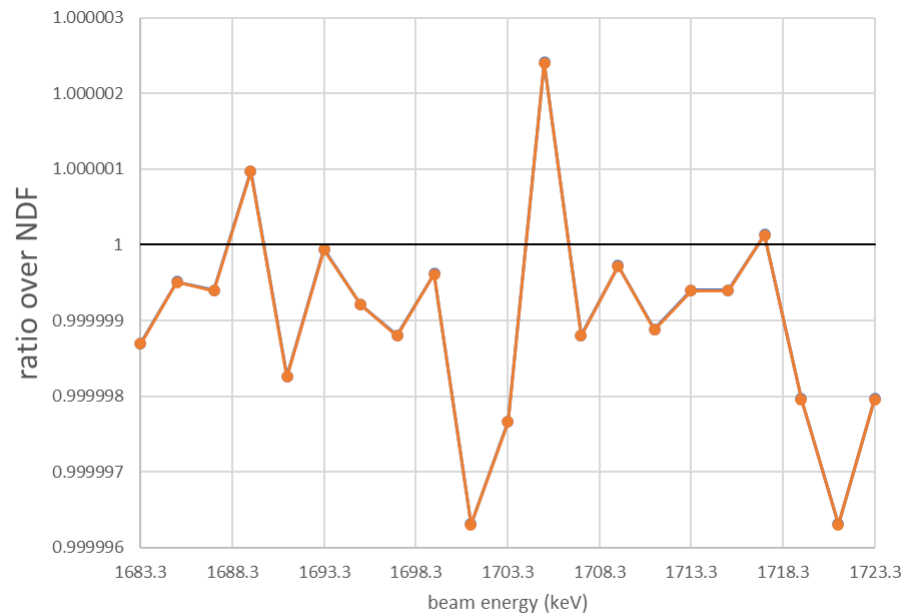


Exercise 1 – Gauss straggling $\Delta E=0$

Ex 1 Gauss Straggling $\Delta E=0$



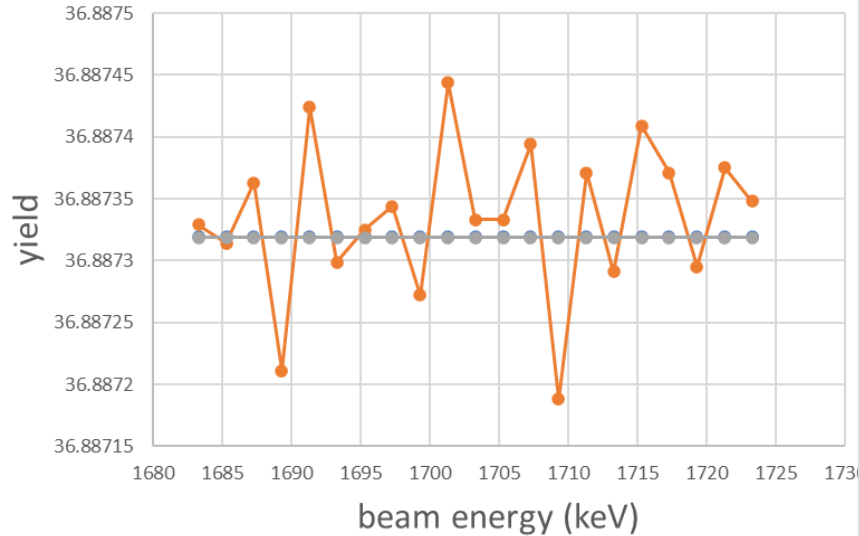
—●— ERYA —●— NDF —●— SIMNRA



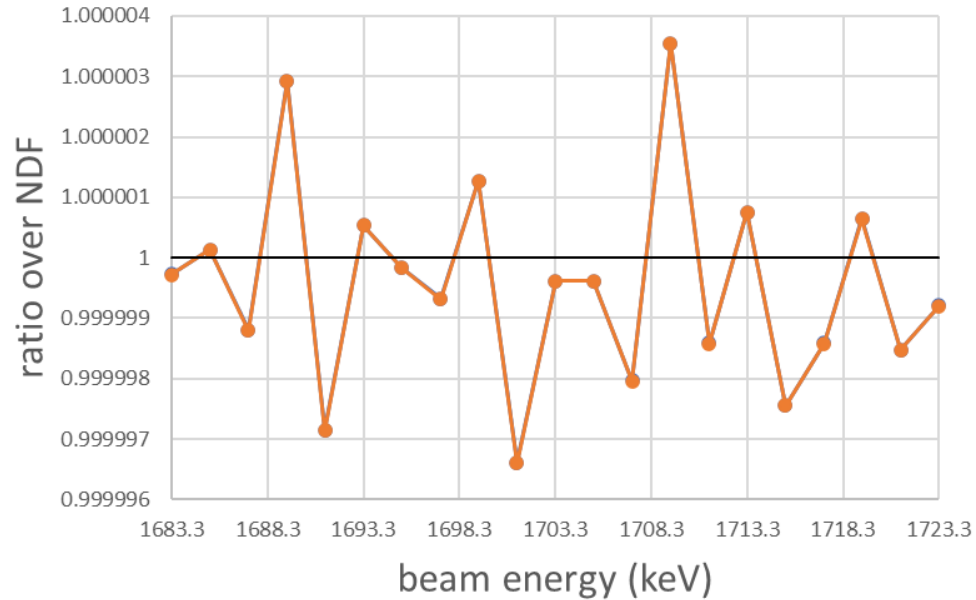
—●— ERYA —●— SIMNRA

Exercise 1 – Gauss straggling $\Delta E=1$

Ex 1 Gauss Straggling $\Delta E=1$



— ERYA — NDF — SIMNRA



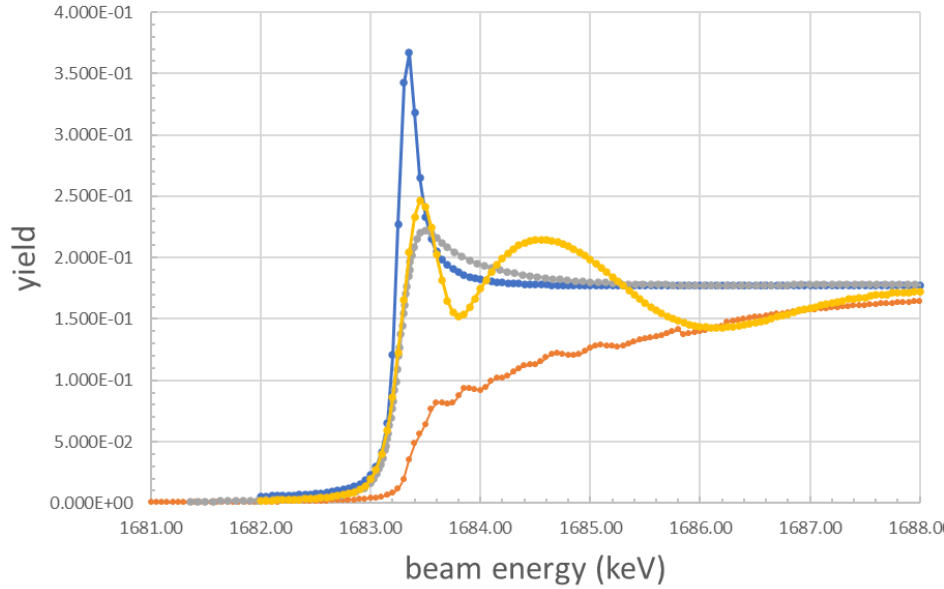
— ERYA — SIMNRA

Exercise 2 – Full straggling $\Delta E=0$ 50 eV

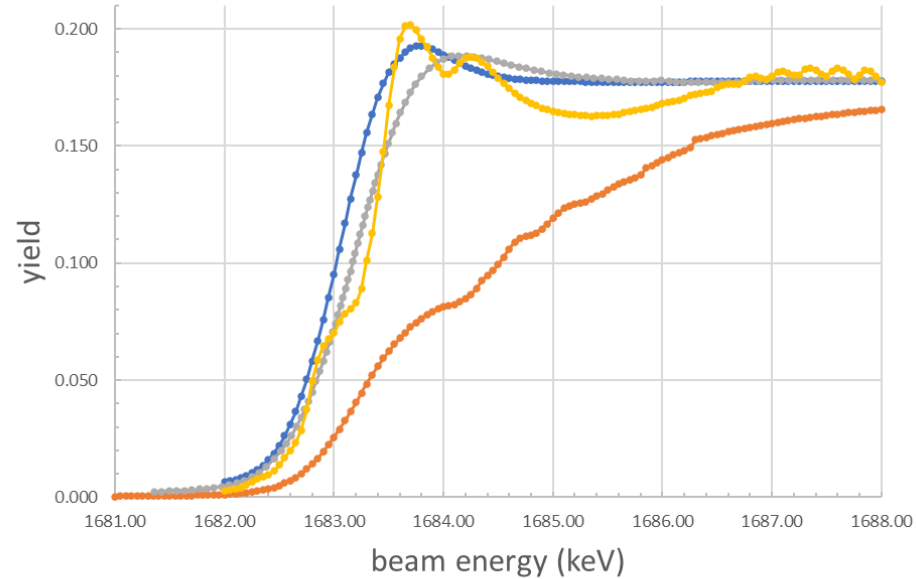
Exercise 2 – Full straggling $\Delta E=1$ 50 eV



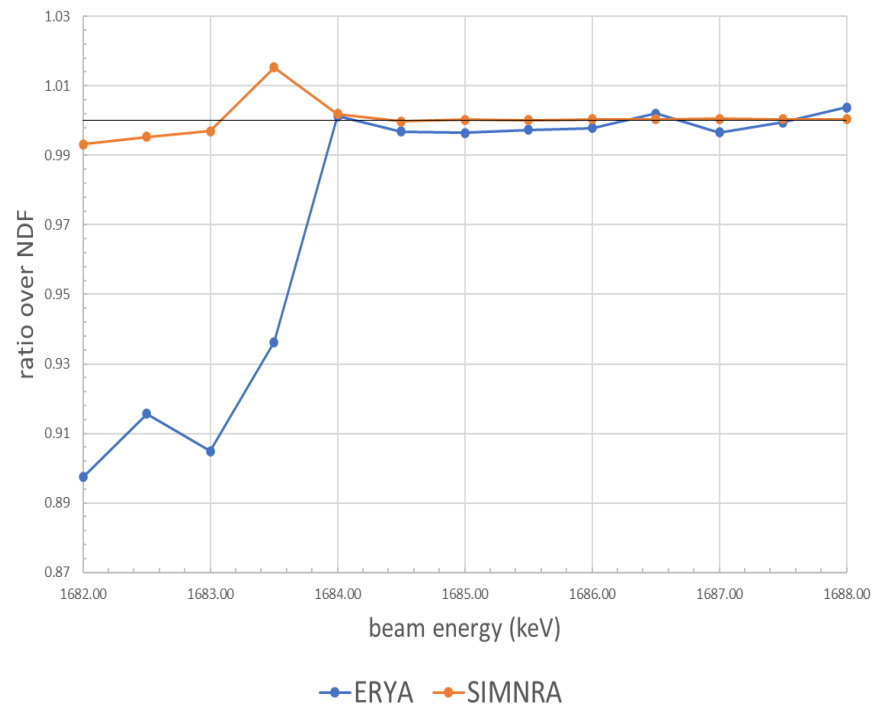
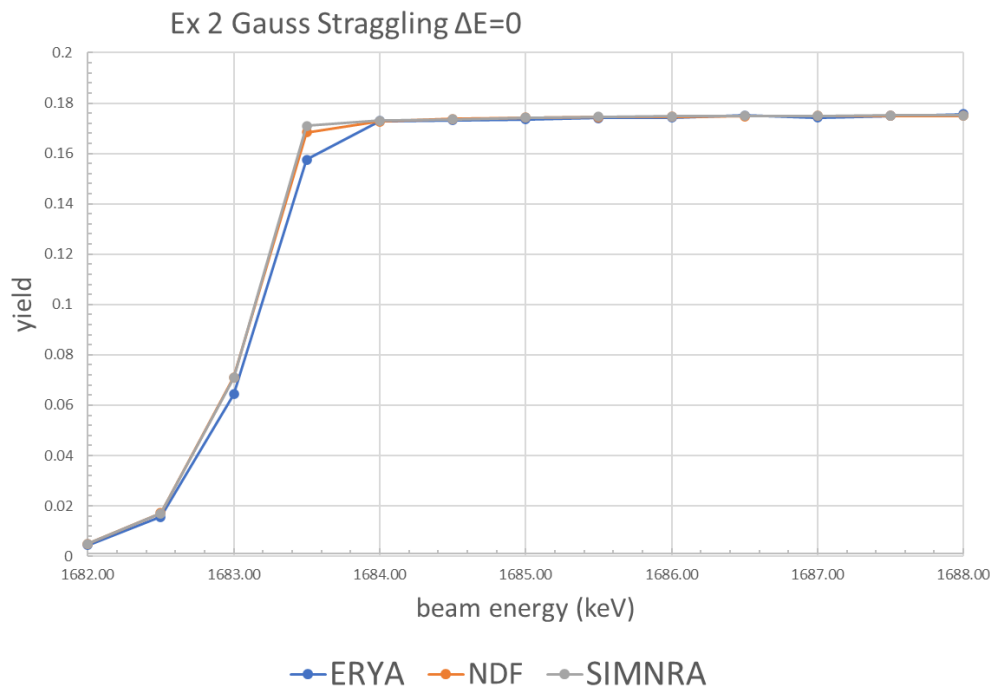
Ex 2 Full Straggling $\Delta E=0$



Ex 2 Full Straggling $\Delta E=1$

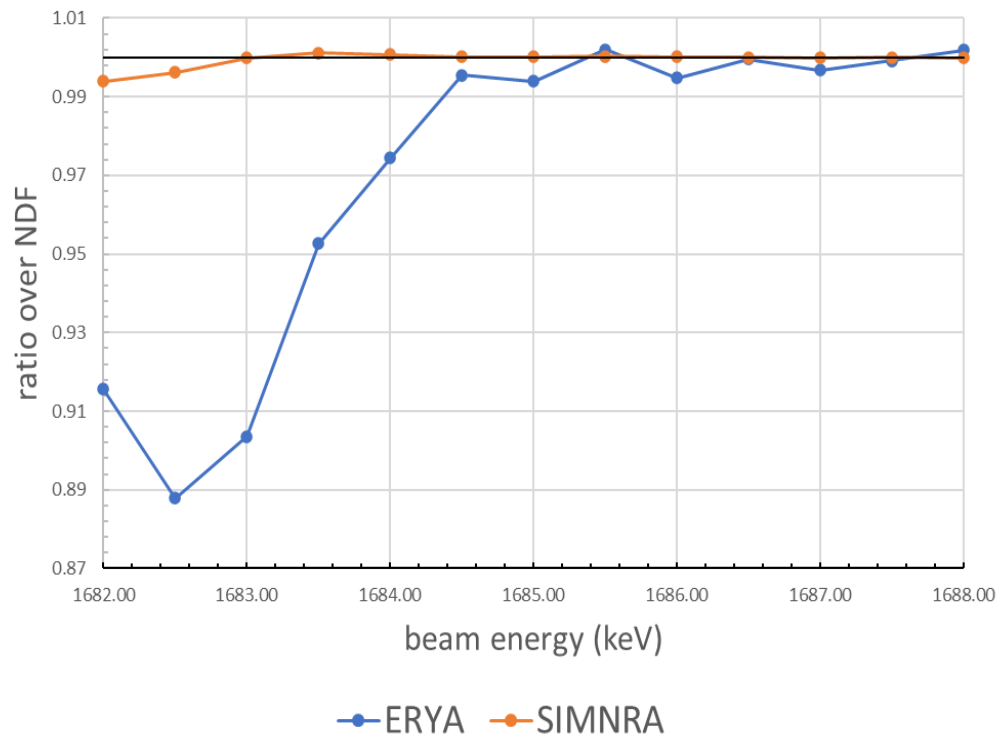
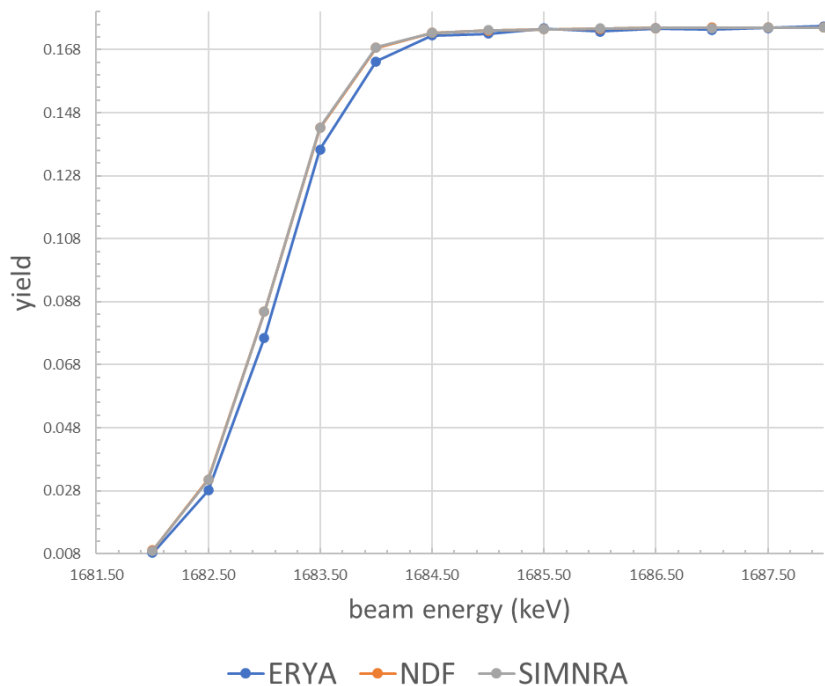


Exercise 2 – Gauss straggling $\Delta E=0$



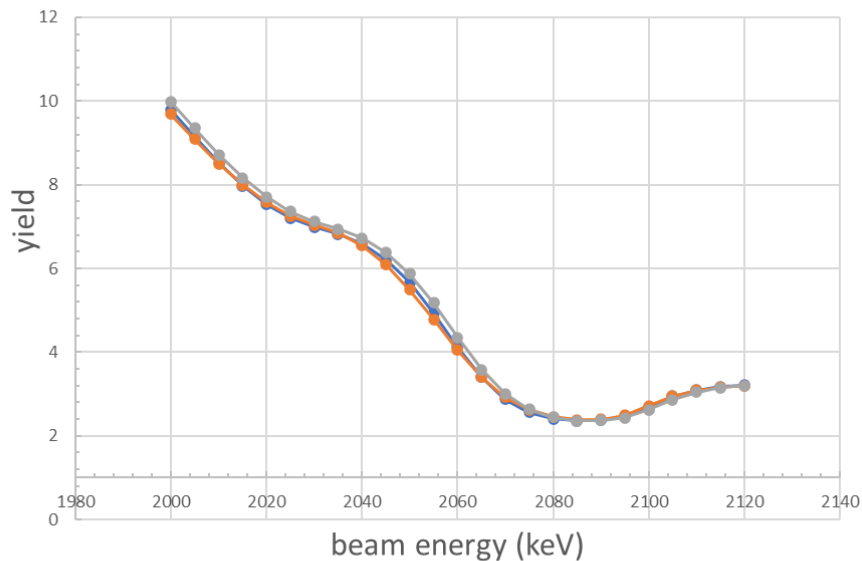
Exercise 2 – Gauss straggling $\Delta E=1$

Ex 2 Gauss Straggling $\Delta E=1$

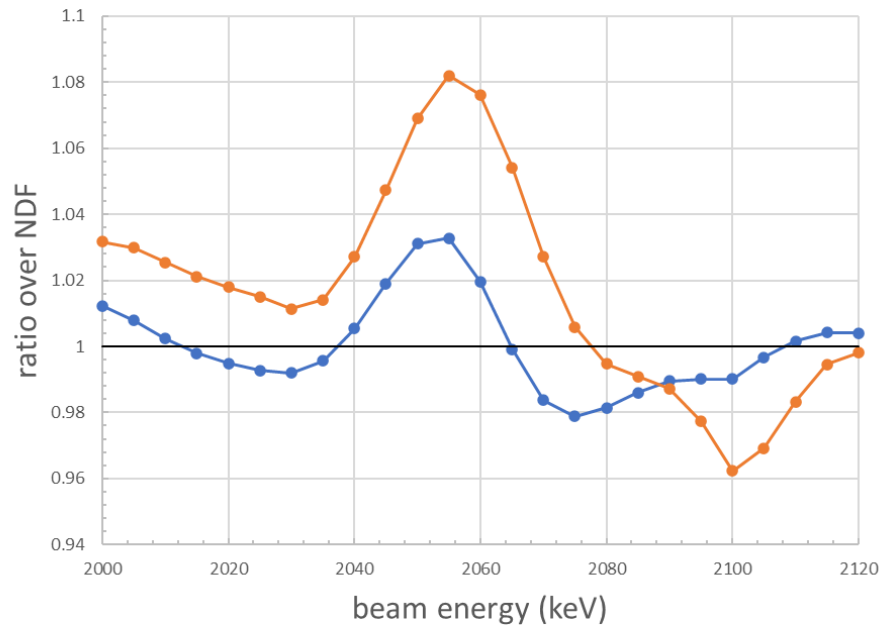


Exercise 3 – Full straggling $\Delta E=0$

Ex 3 Full straggling $\Delta E=0$



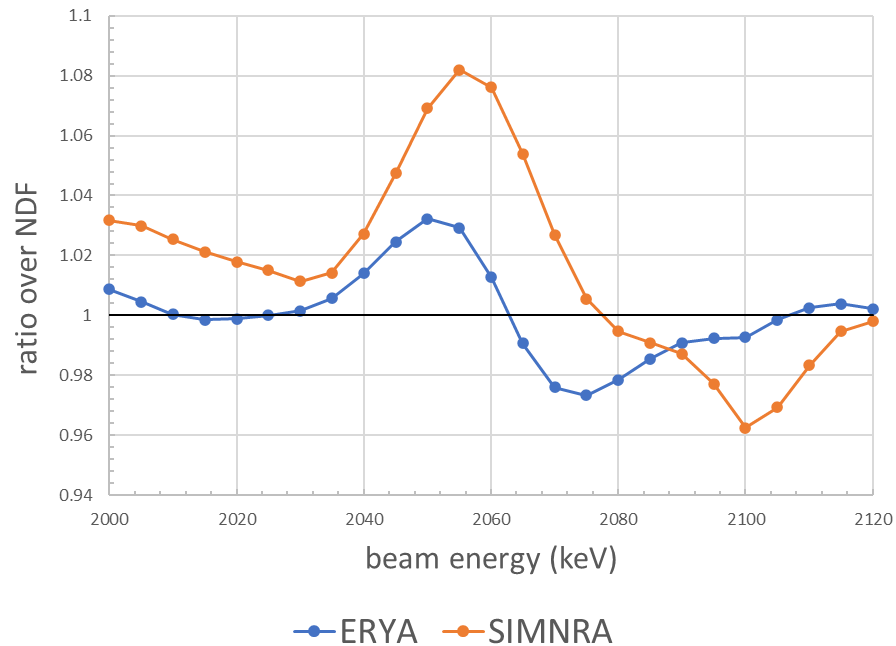
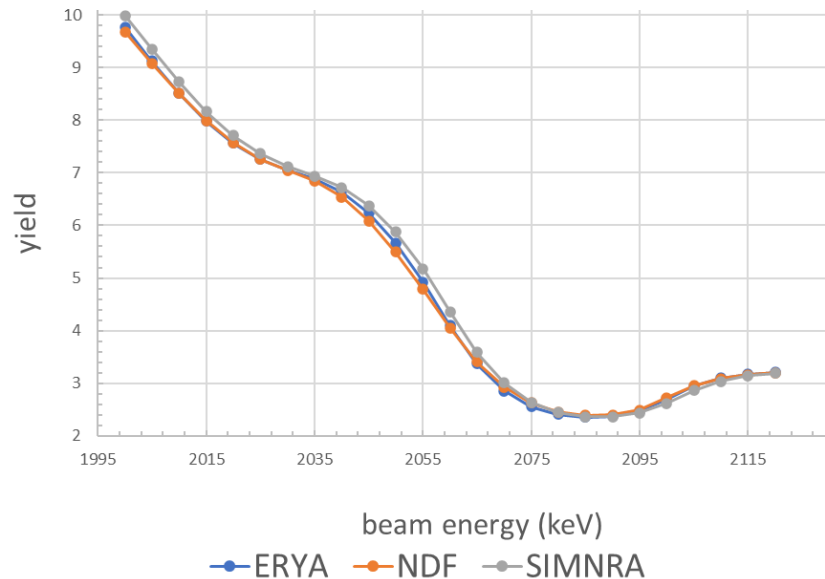
—●— ERYA —●— NDF —●— SIMNRA



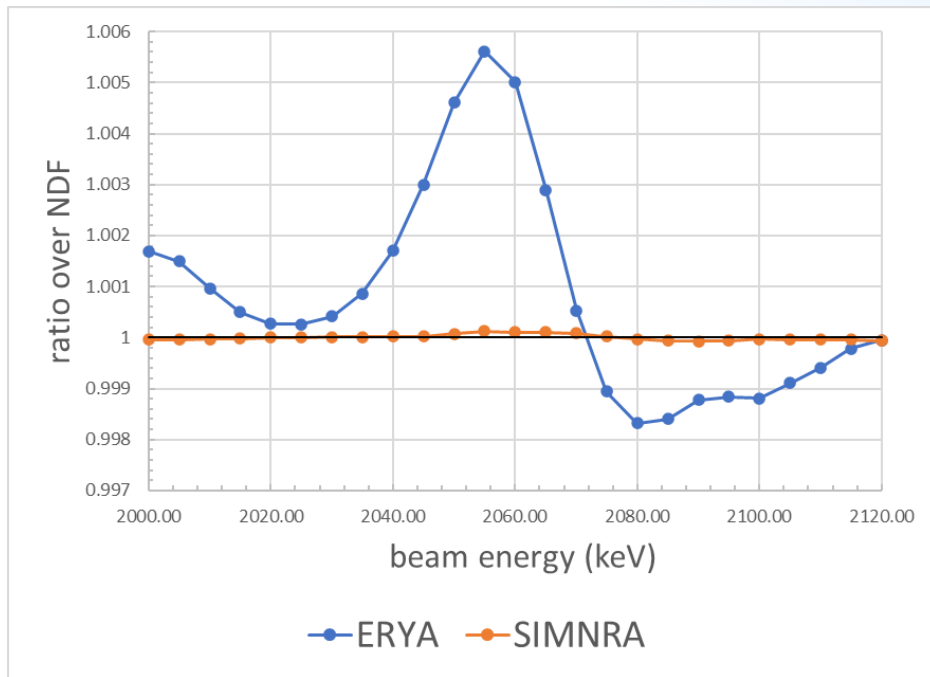
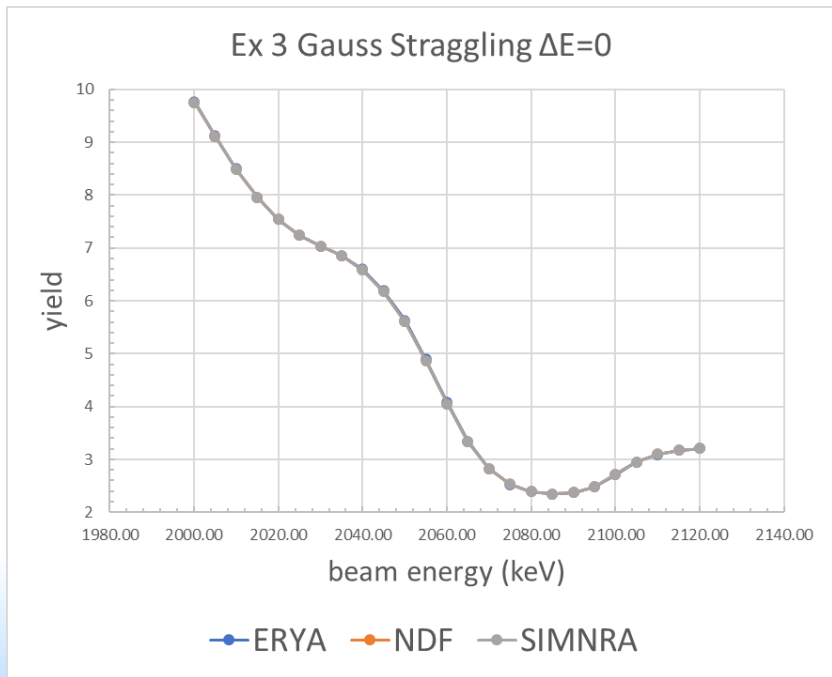
—●— ERYA —●— SIMNRA

Exercise 3 – Full straggling $\Delta E=1$

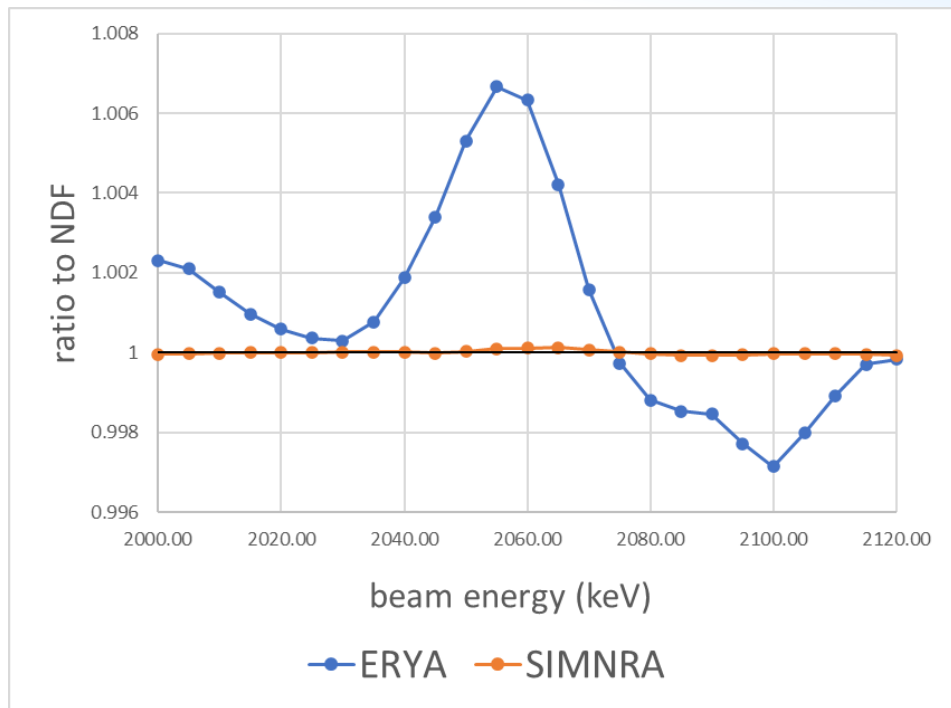
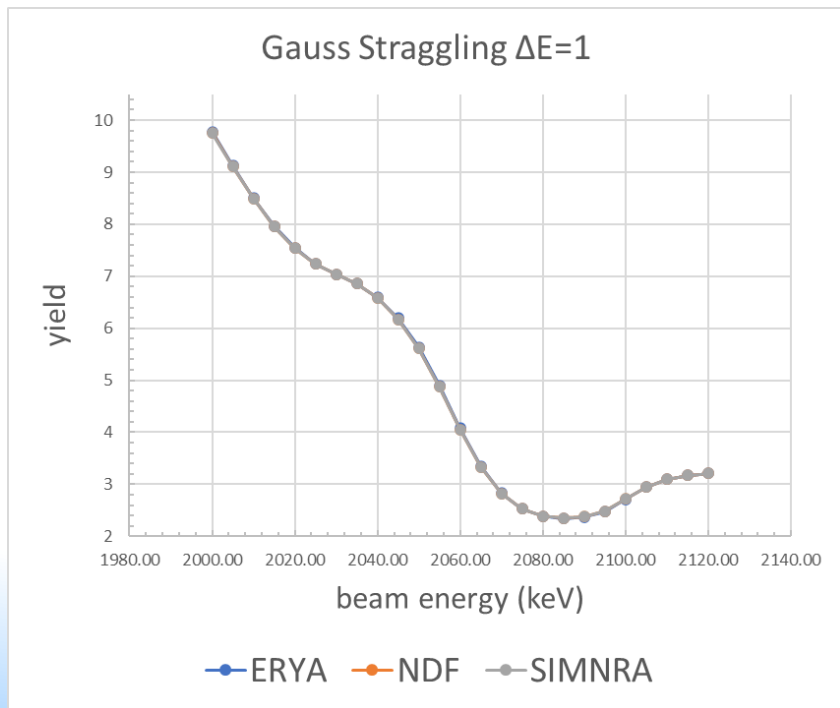
Ex 3 Full straggling $\Delta E=1$



Exercise 3 – Gauss straggling $\Delta E=0$

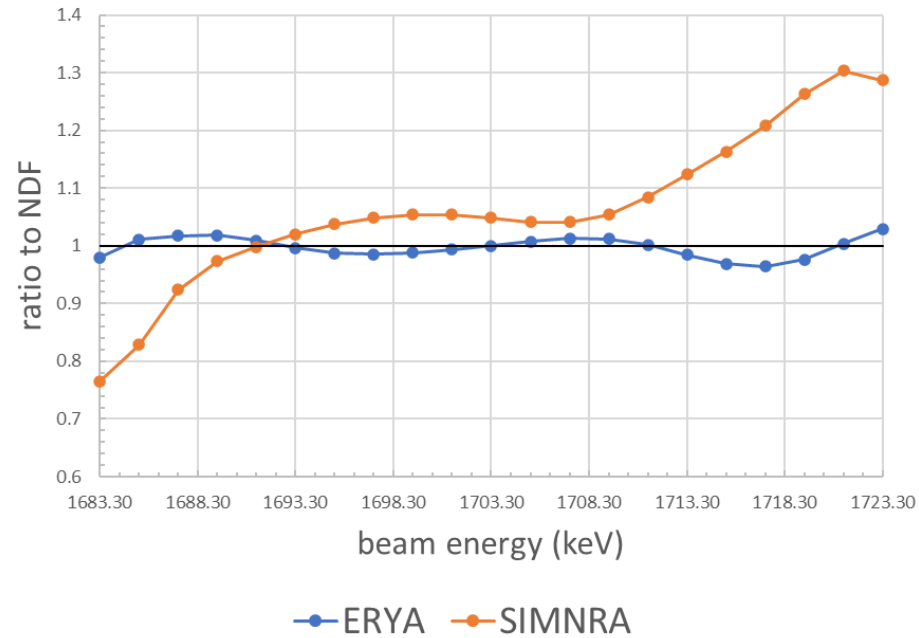
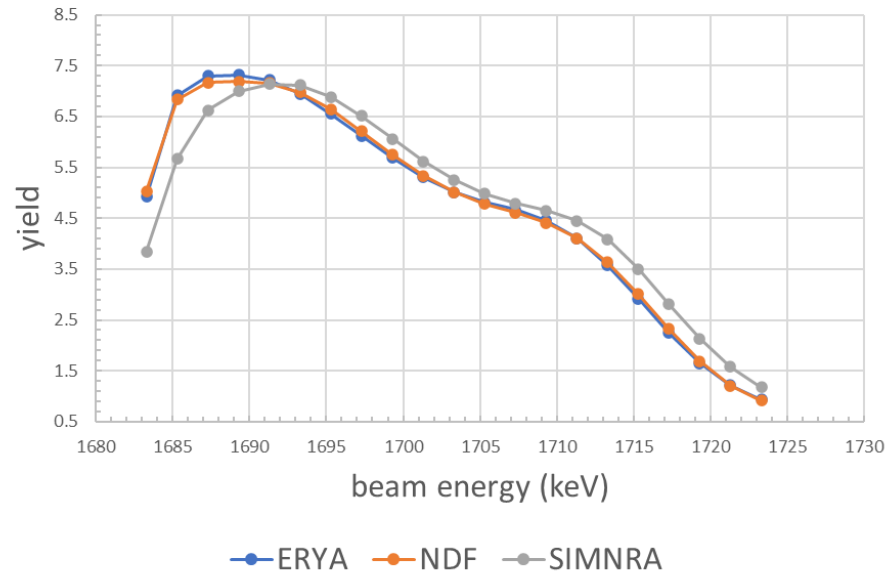


Exercise 3 – Gauss straggling $\Delta E=1$



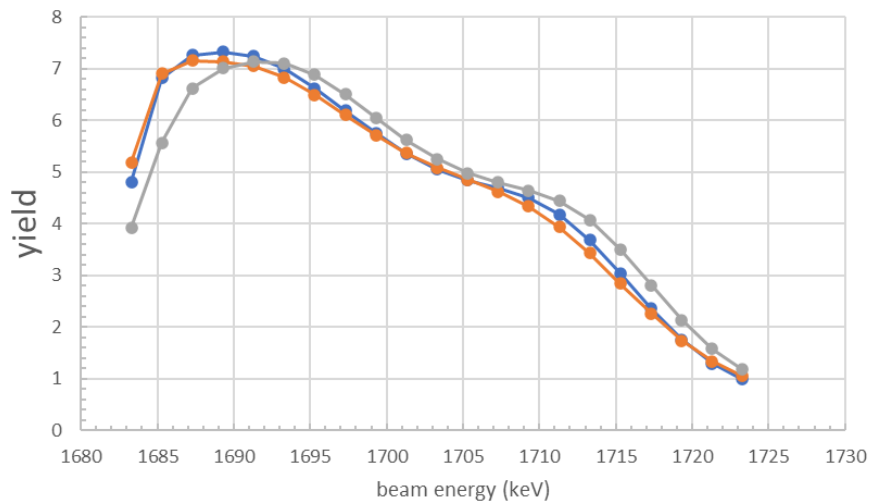
Exercise 4 – Full straggling $\Delta E=0$

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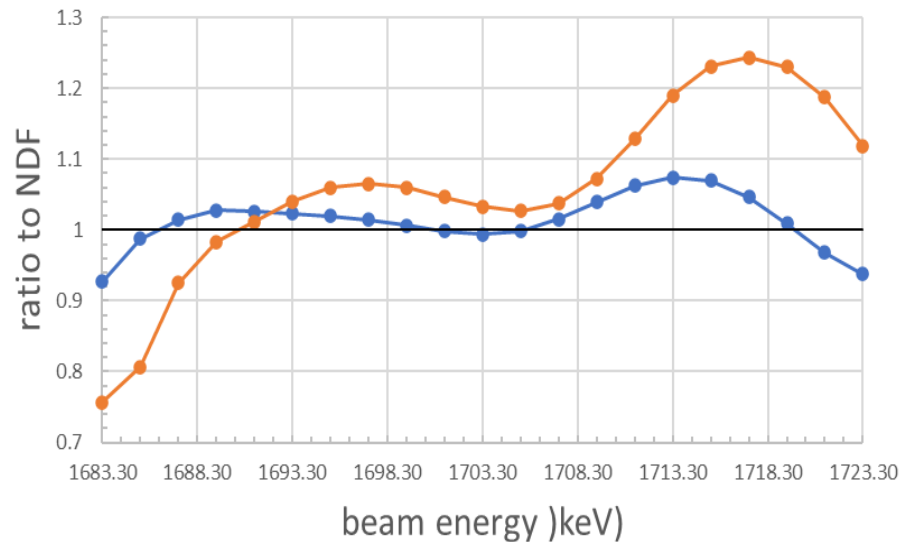


Exercise 4 – Full straggling $\Delta E=1$

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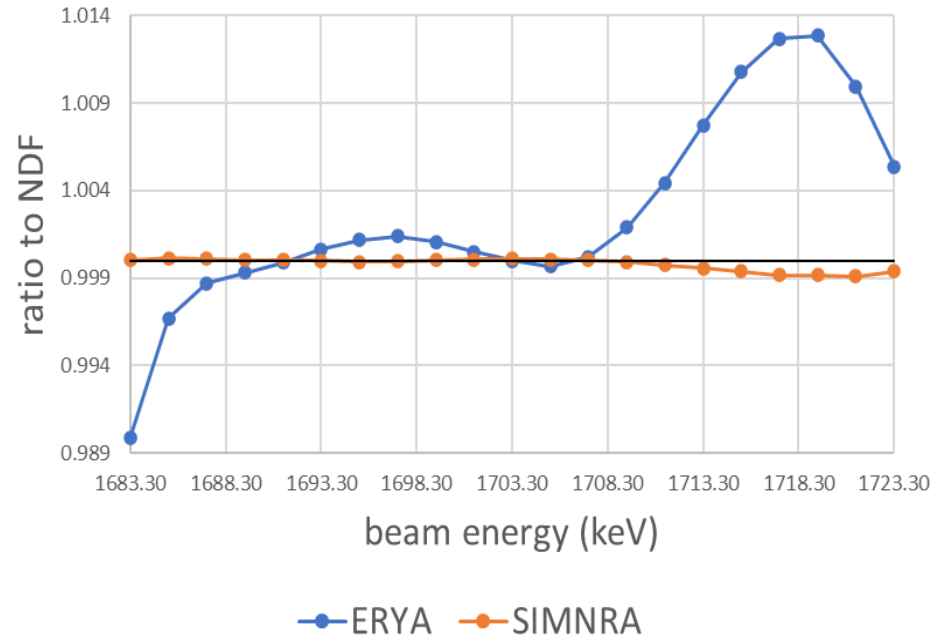
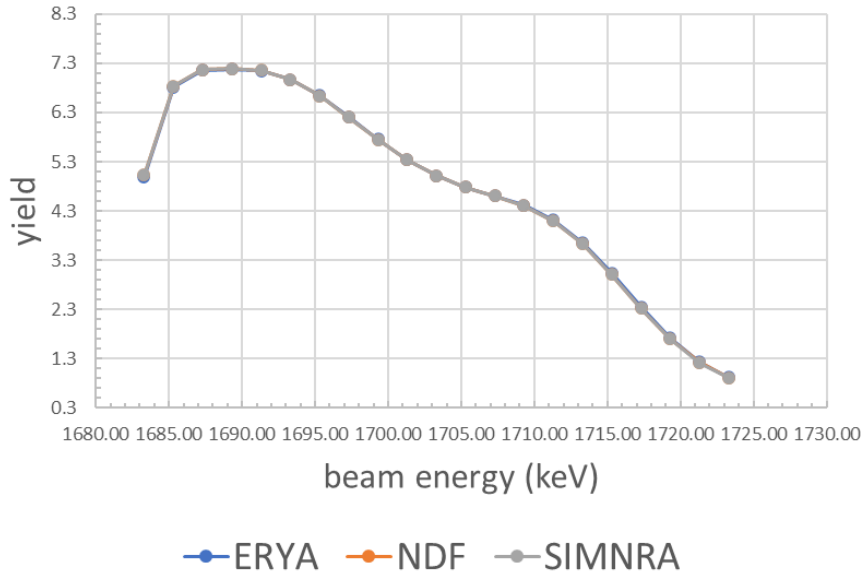
—●— ERYA —●— NDF —●— SIMNRA



—●— ERYA —●— SIMNRA

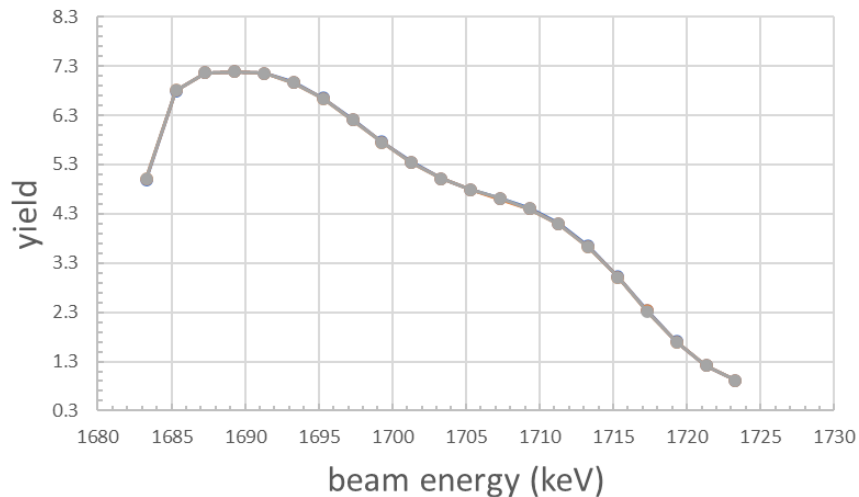
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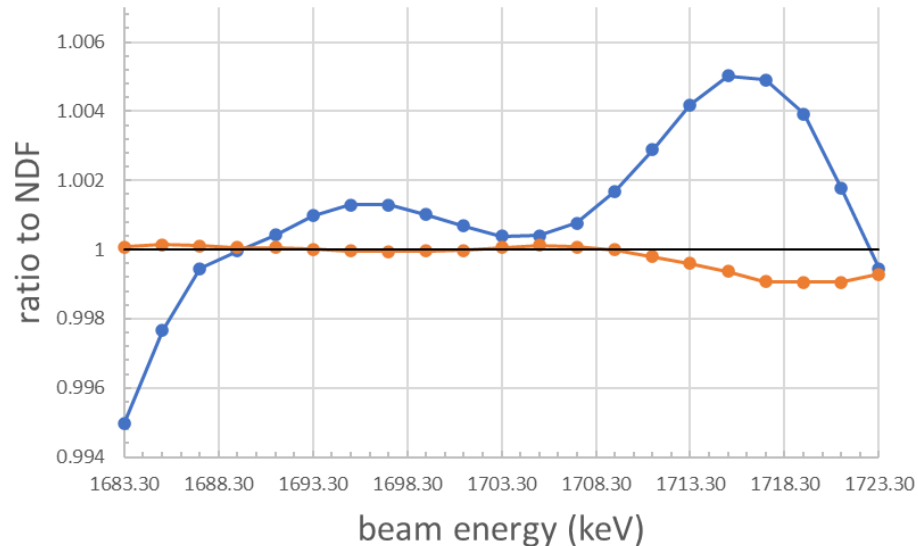


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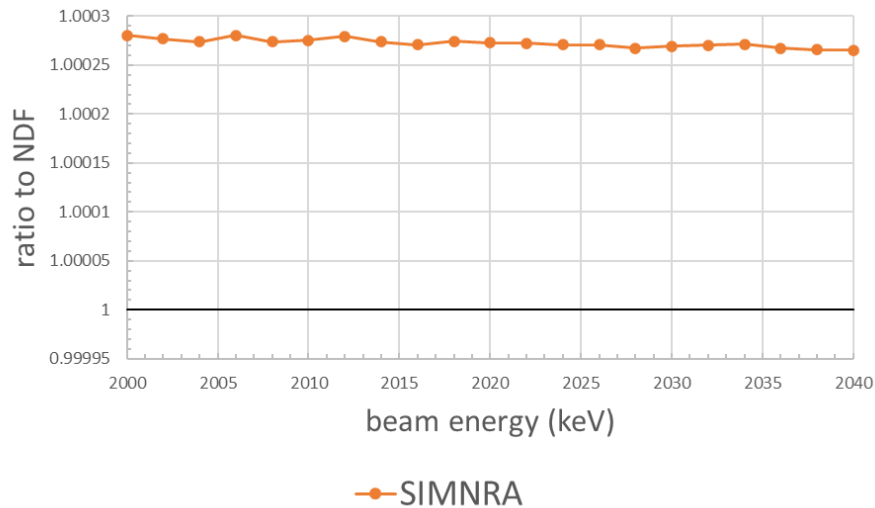
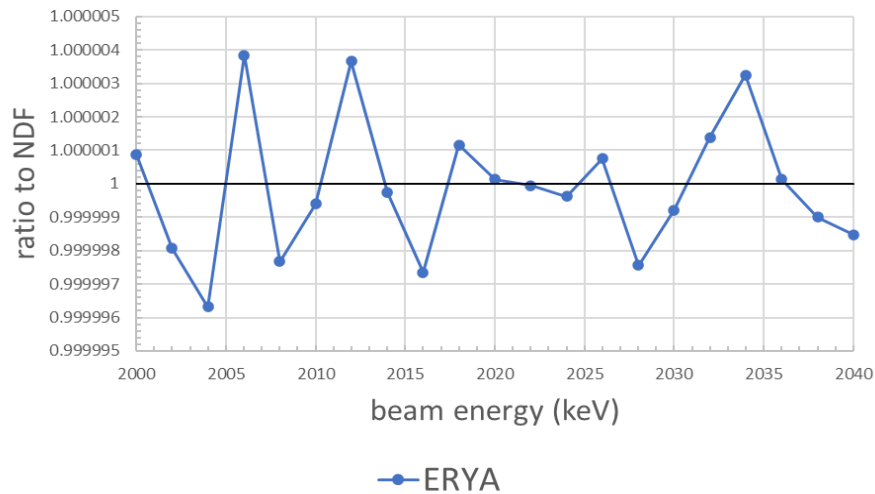
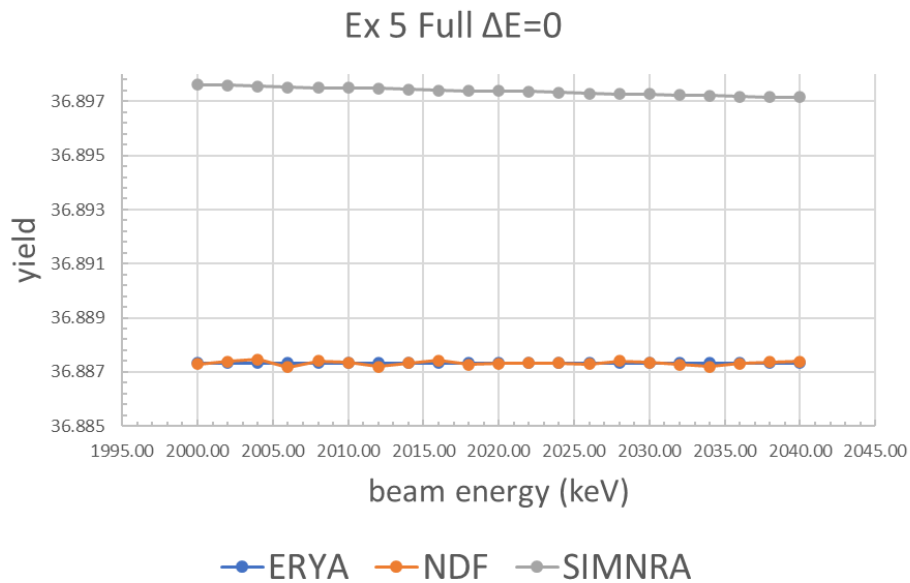


—●— ERYA —●— NDF —●— SIMNRA



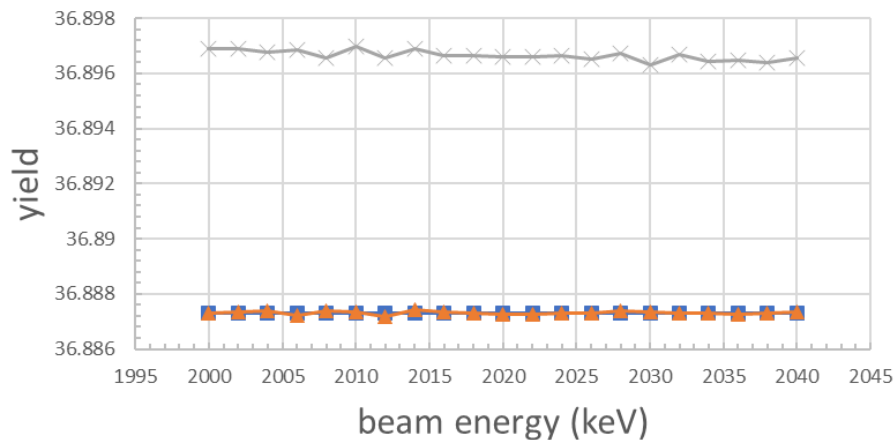
—●— ERYA —●— SIMNRA

Exercise 5 – Full straggling $\Delta E=0$

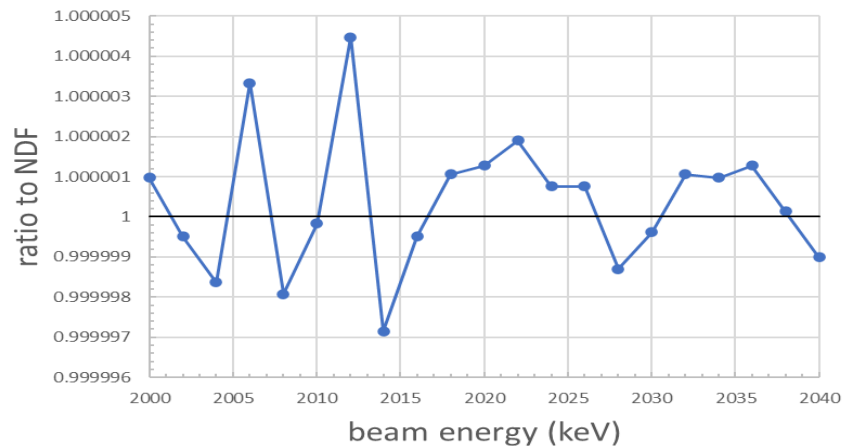


Exercise 5 – Full straggling $\Delta E=1$

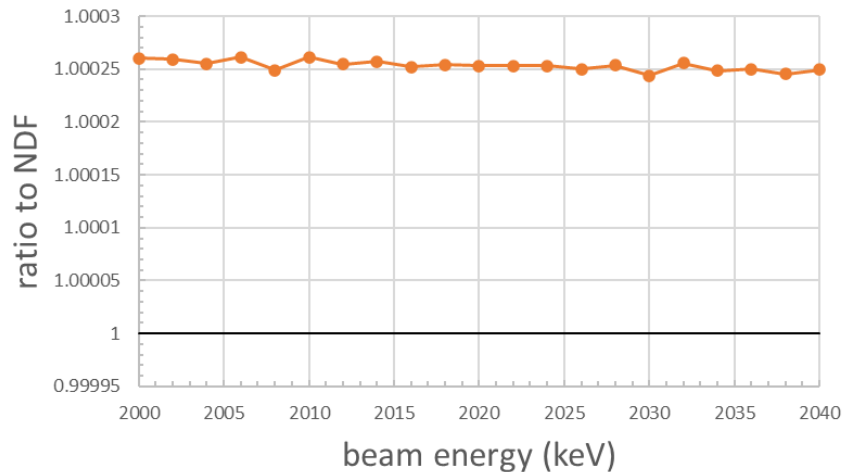
Ex 5 Full Straggling $\Delta E=1$



■ ERYA ▲ NDF × SIMNRA



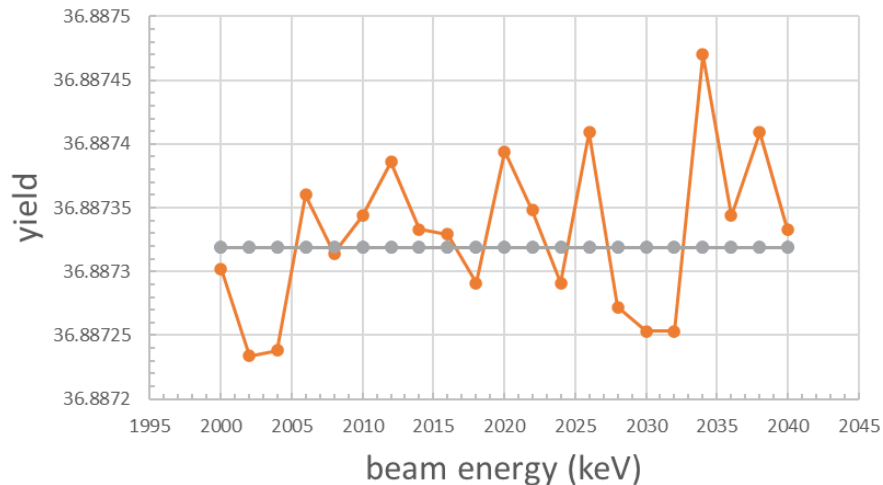
● ERYA



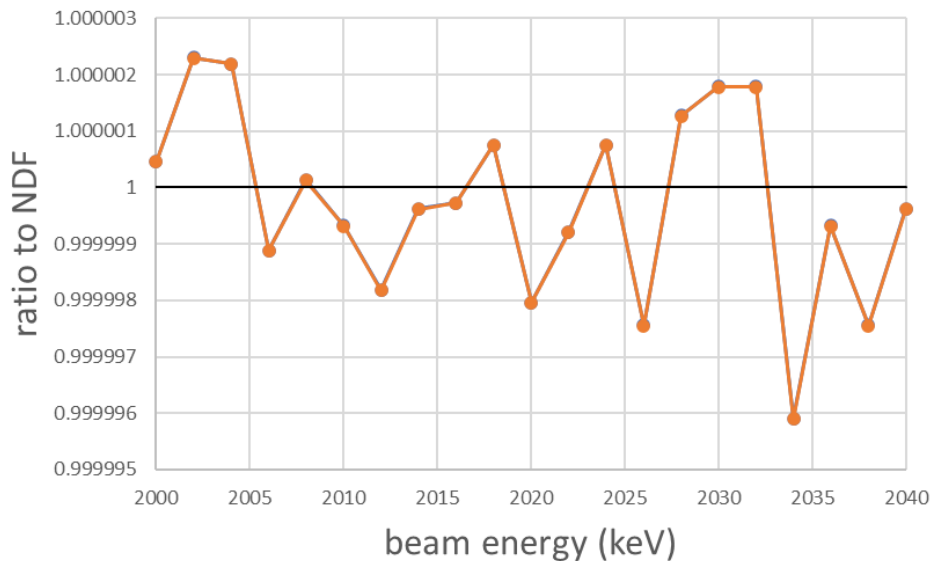
● SIMNRA

Exercise 5 – Gauss straggling $\Delta E=0$

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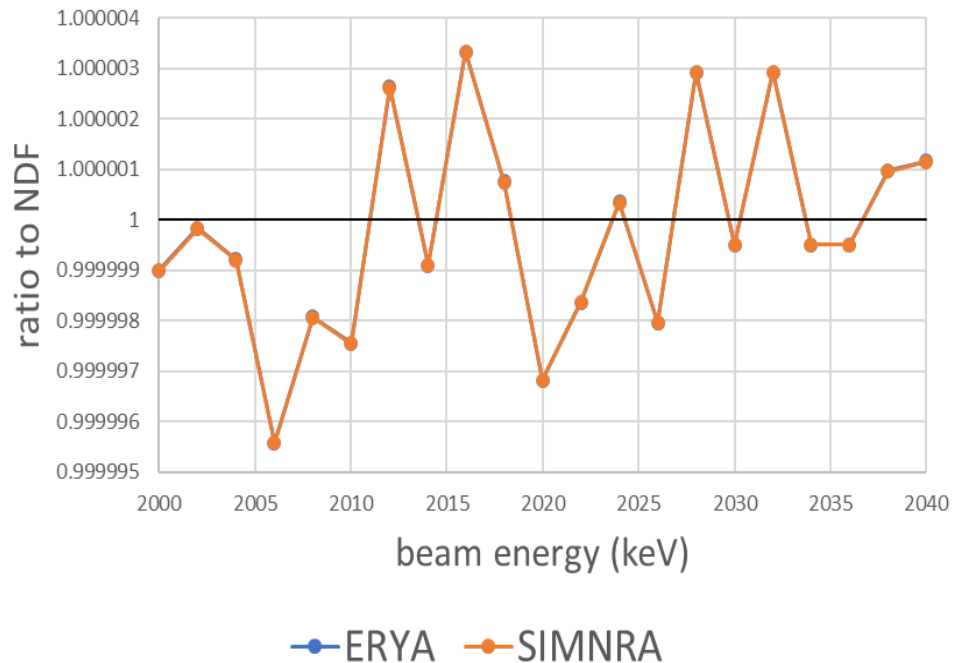
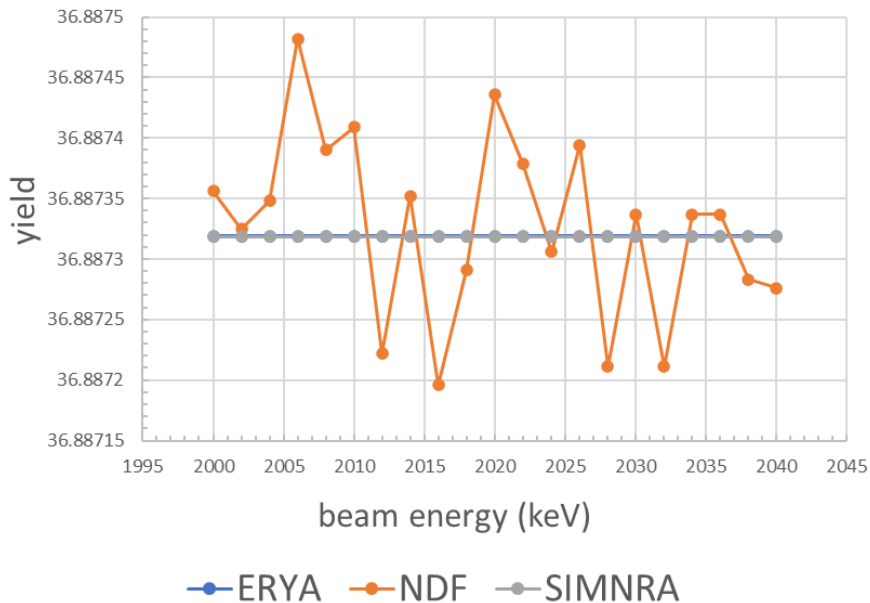
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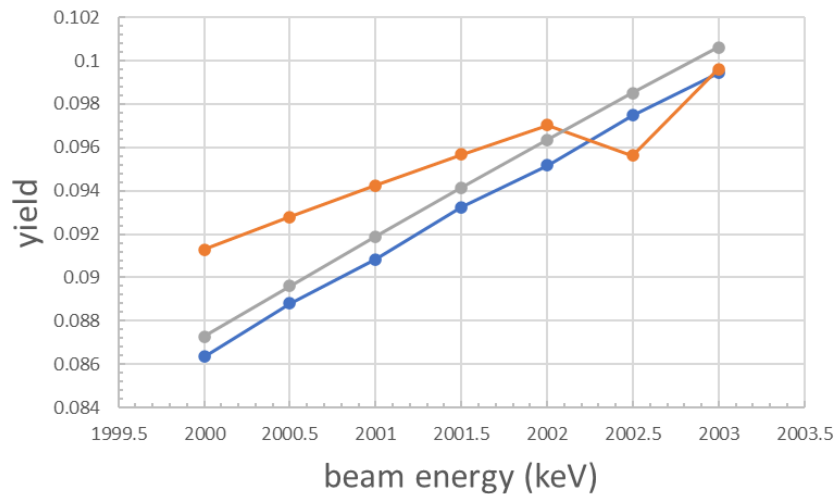
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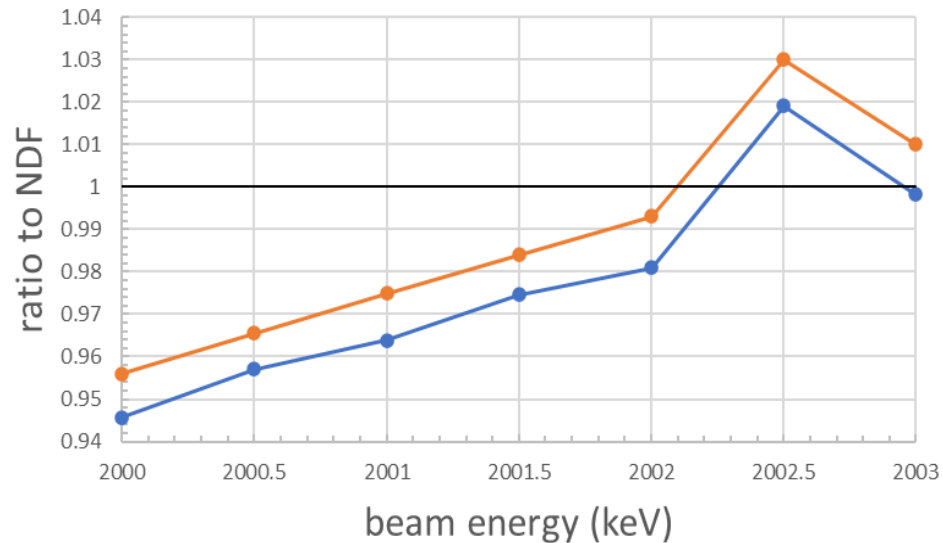


Exercise 6 – Full straggling $\Delta E=0$

Ex 6 Full $\Delta E=0$



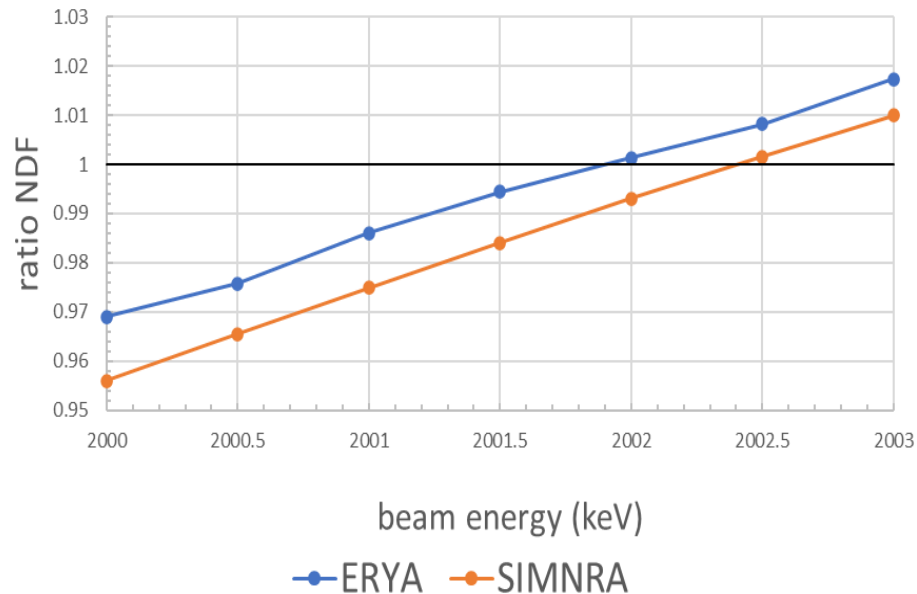
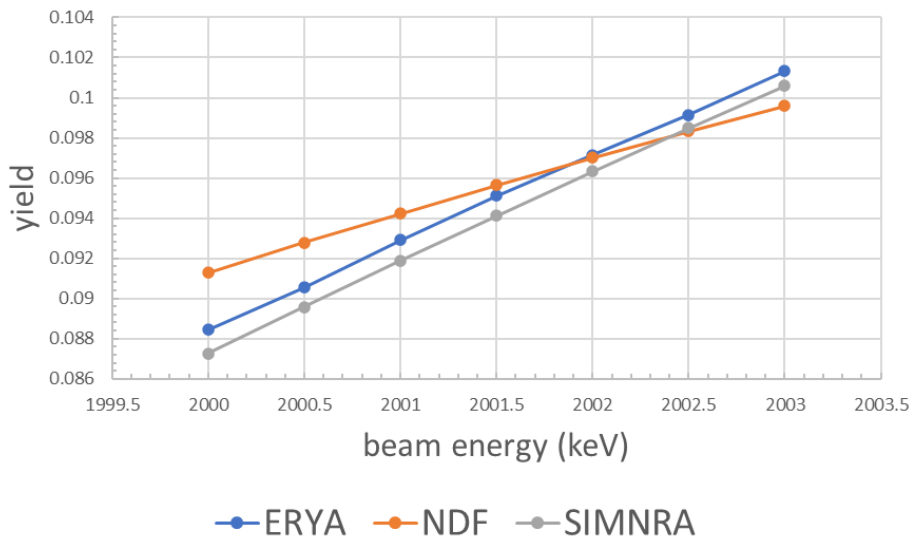
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—●— ERYA —●— SIMNRA

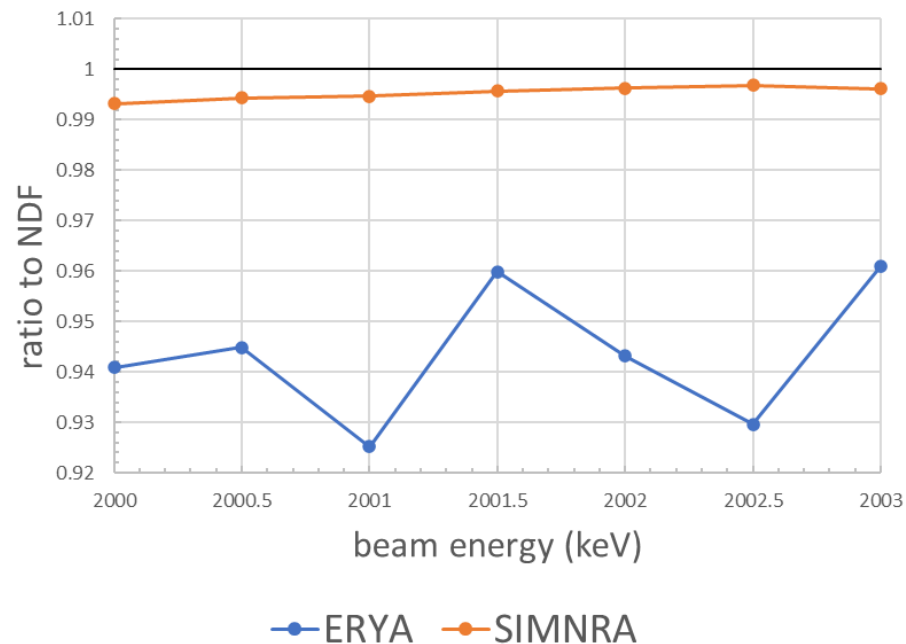
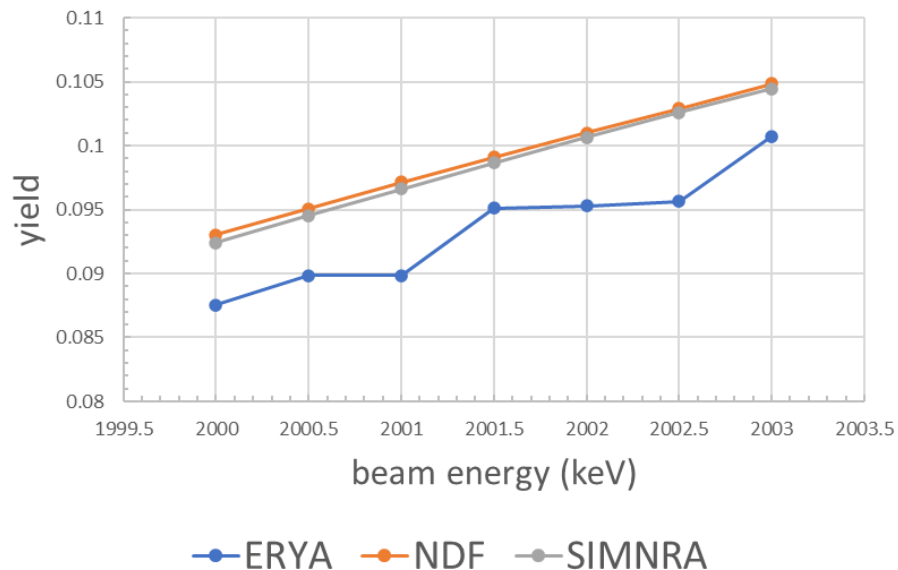
Exercise 6 – Full straggling $\Delta E=1$

Ex 6 Full Straggling $\Delta E=1$



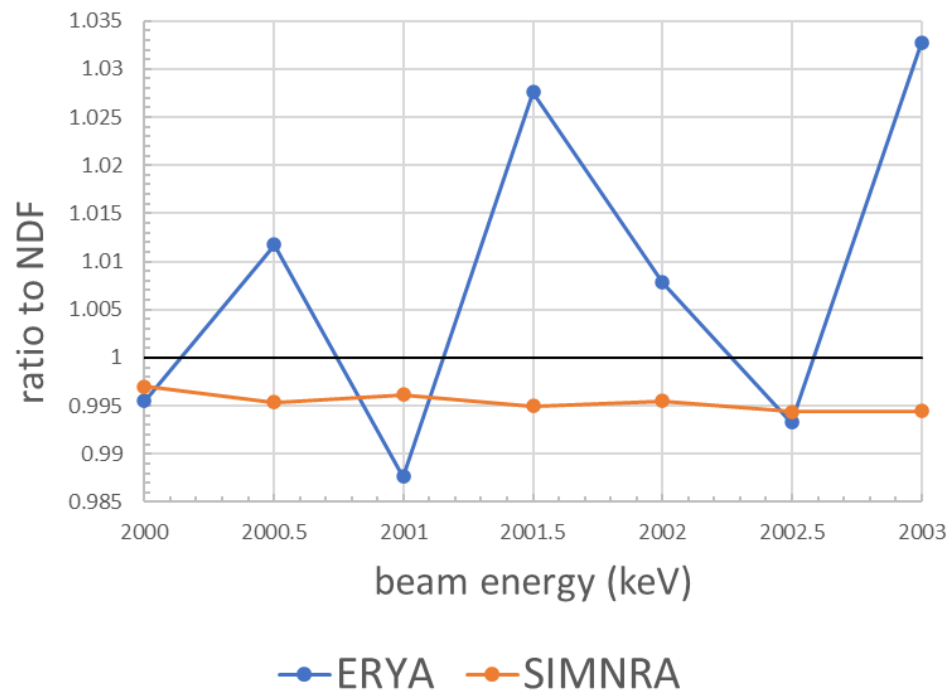
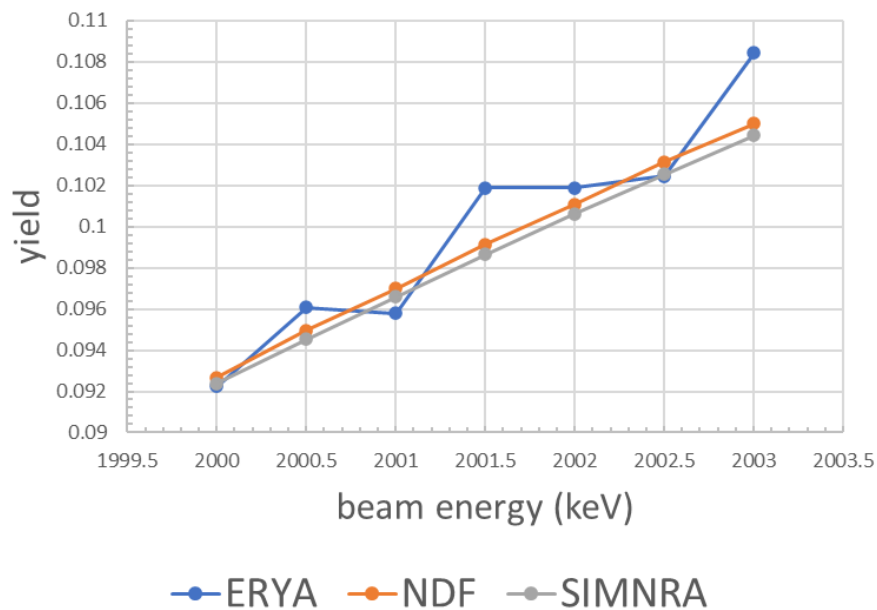
Exercise 6 – Gauss straggling $\Delta E=0$

Ex 6 Gauss $\Delta E=0$



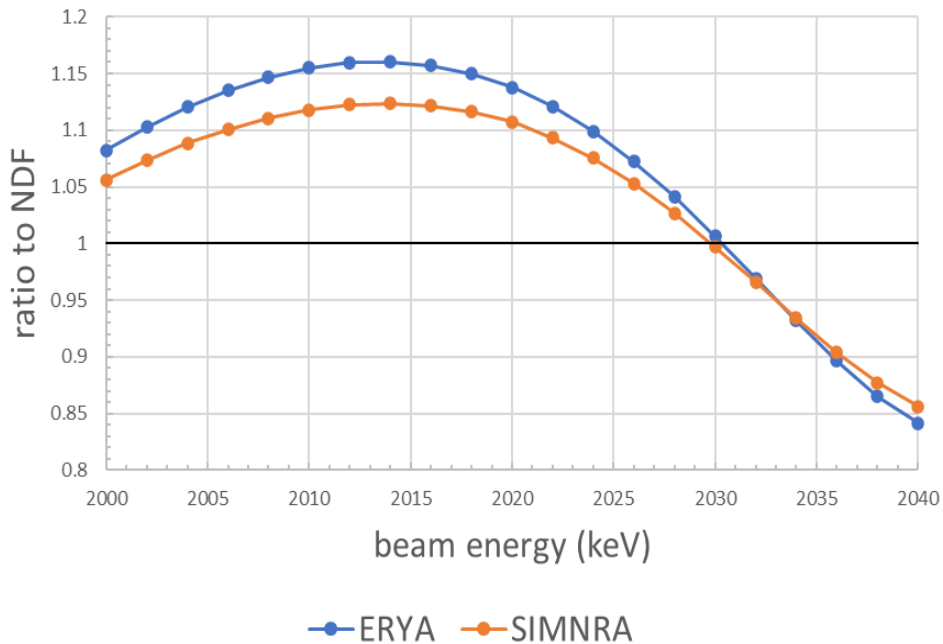
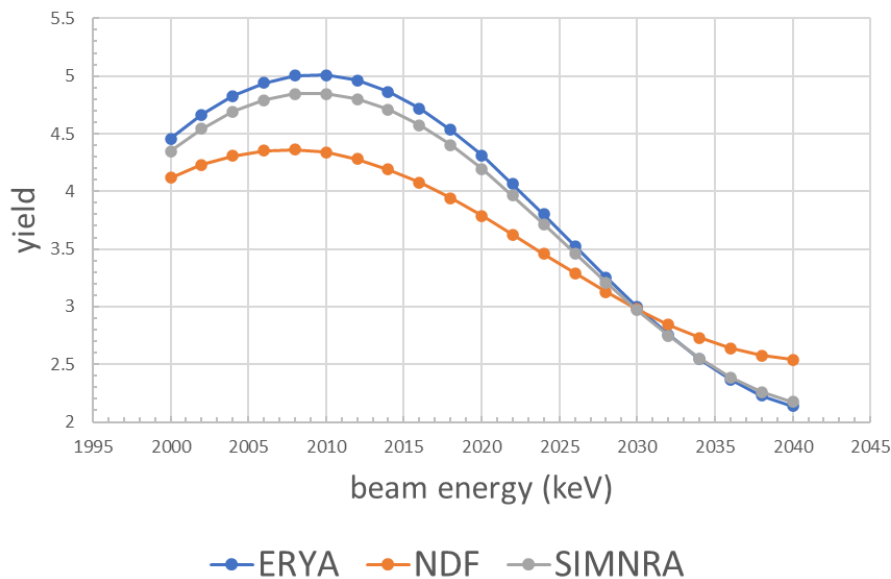
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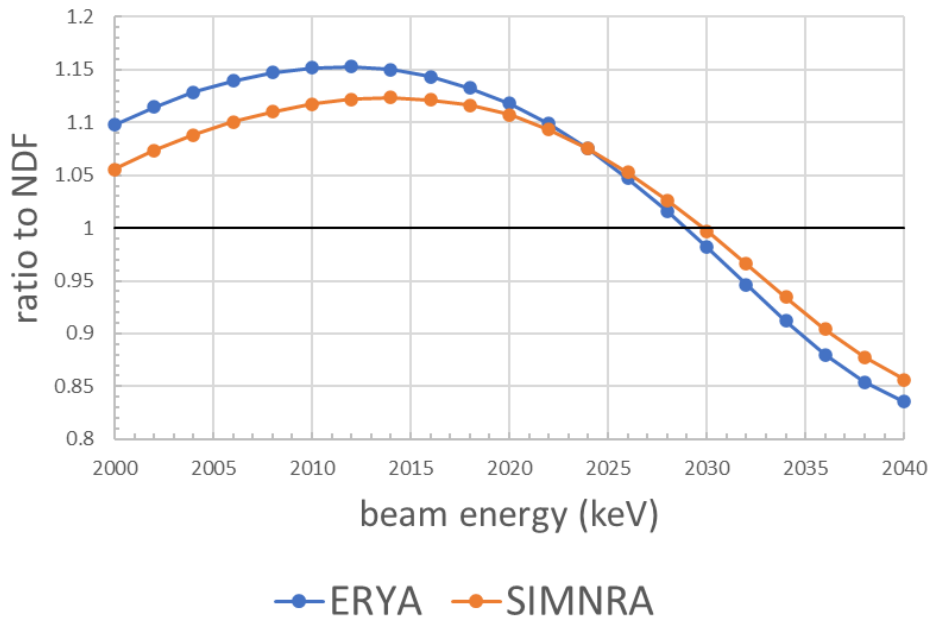
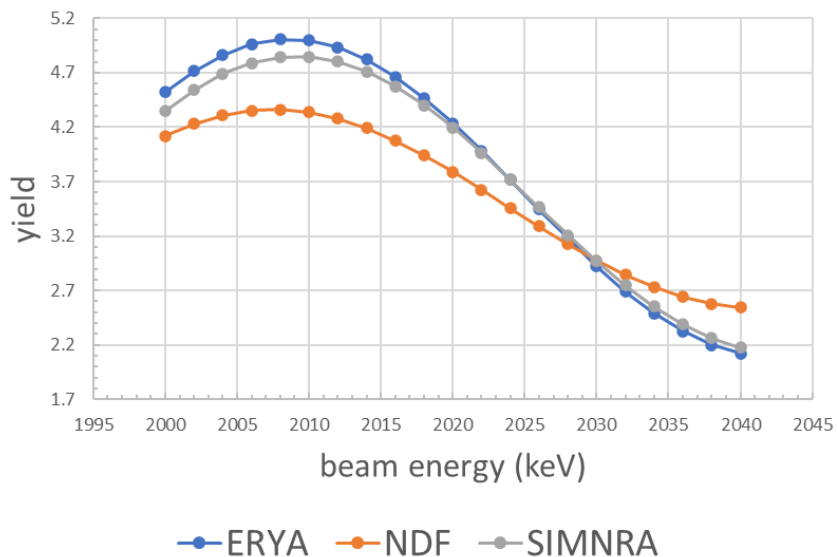
Exercise 7 – Full straggling $\Delta E=0$

Ex 7 Full $\Delta E=0$



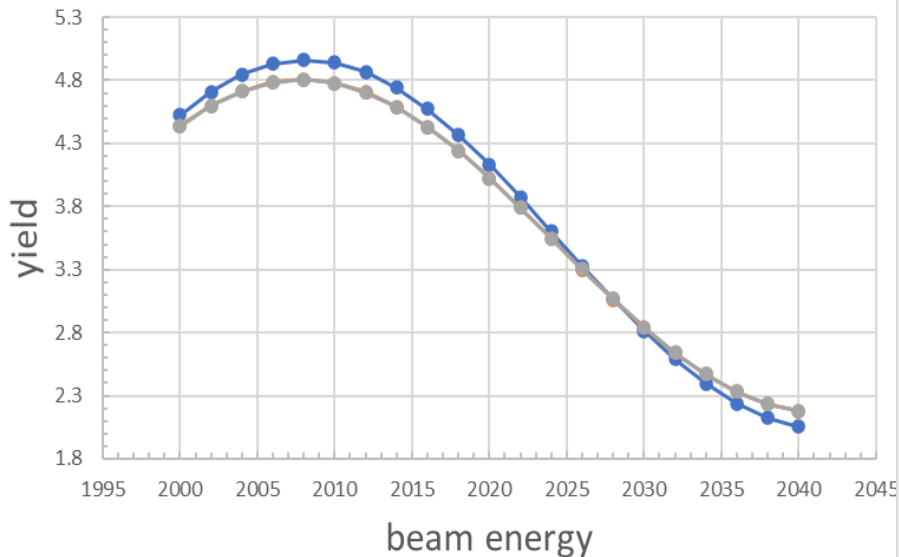
Exercise 7 – Full straggling $\Delta E=1$

Ex 7 Full $\Delta E=1$

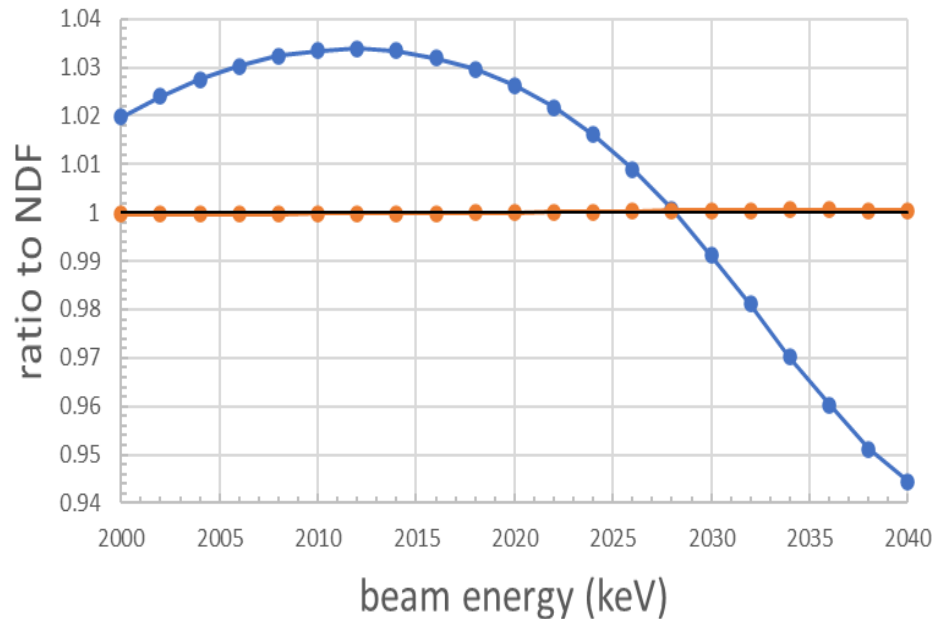


Exercise 7 – Gauss straggling $\Delta E=0$

Ex 7 $\Delta E=0$



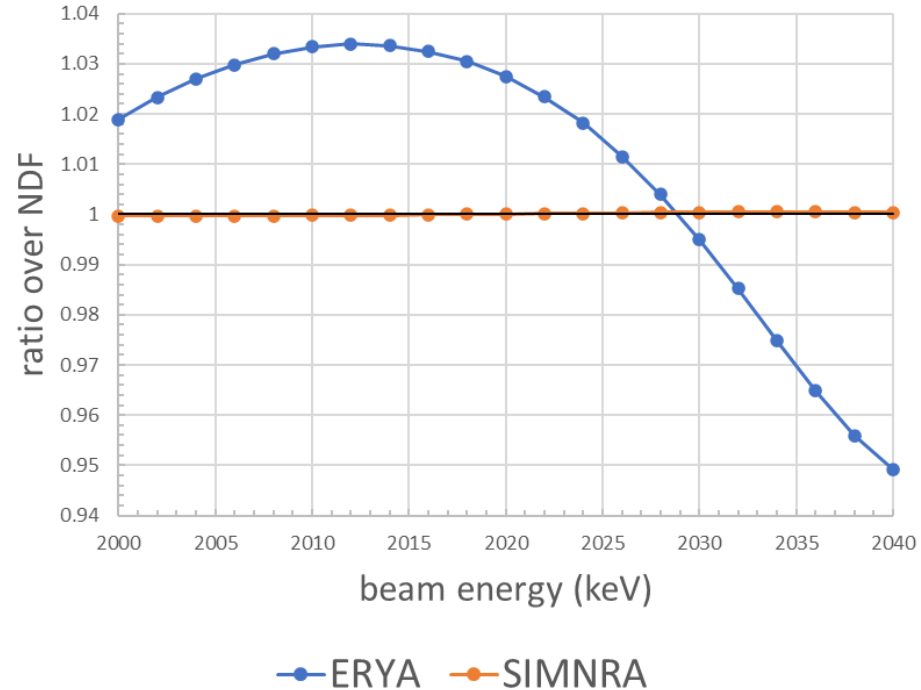
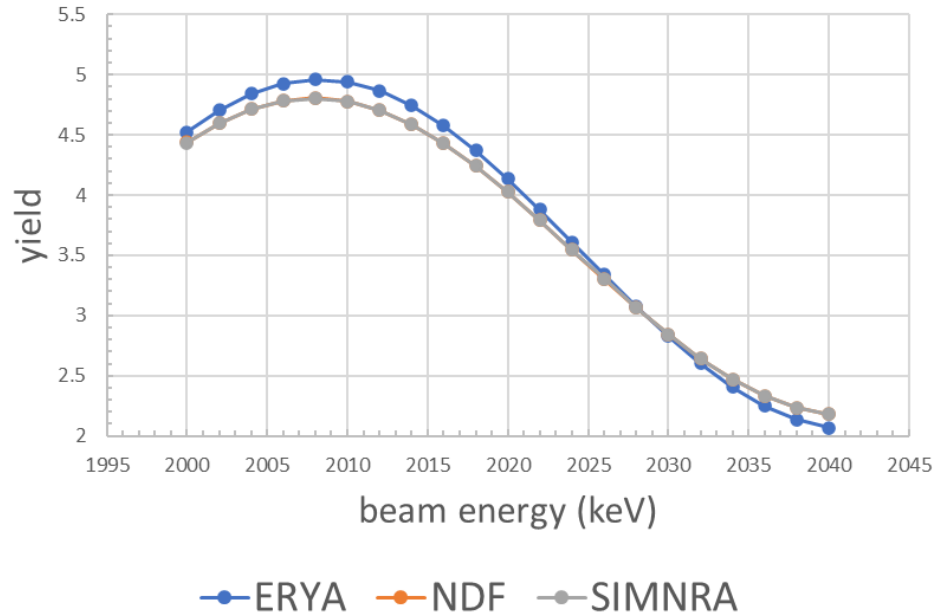
— ERYA — NDF — SIMNRA



— ERYA — SIMNRA

Exercise 7 – Gauss straggling $\Delta E=1$

Ex 7 Gauss $\Delta E=1$





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International Atomic Energy Agency
Atoms for Peace and Development

Thank you!

