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Quenching of spectroscopic factors in ^{10,12}Be(d, ^{3}He) reactions

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IGFAE and LPC-Caen

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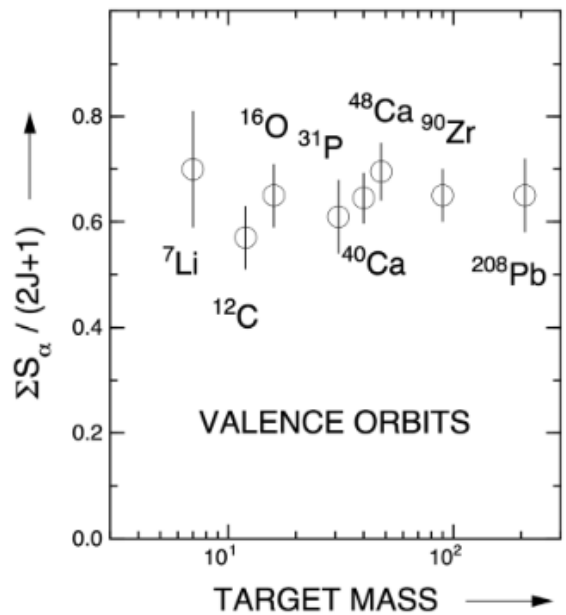
A recap on spectroscopic factors

Spectroscopic factors arise from the breakdown of the single-particle scheme to describe nuclear reactions:

$$\sigma = C^2 S \cdot \sigma_{s.p}$$

- **Long-range** correlations: vibrations, giant resonances,...
- **Short-range**: tensor forces,...

Reduction of $\sim 65\,\%$!



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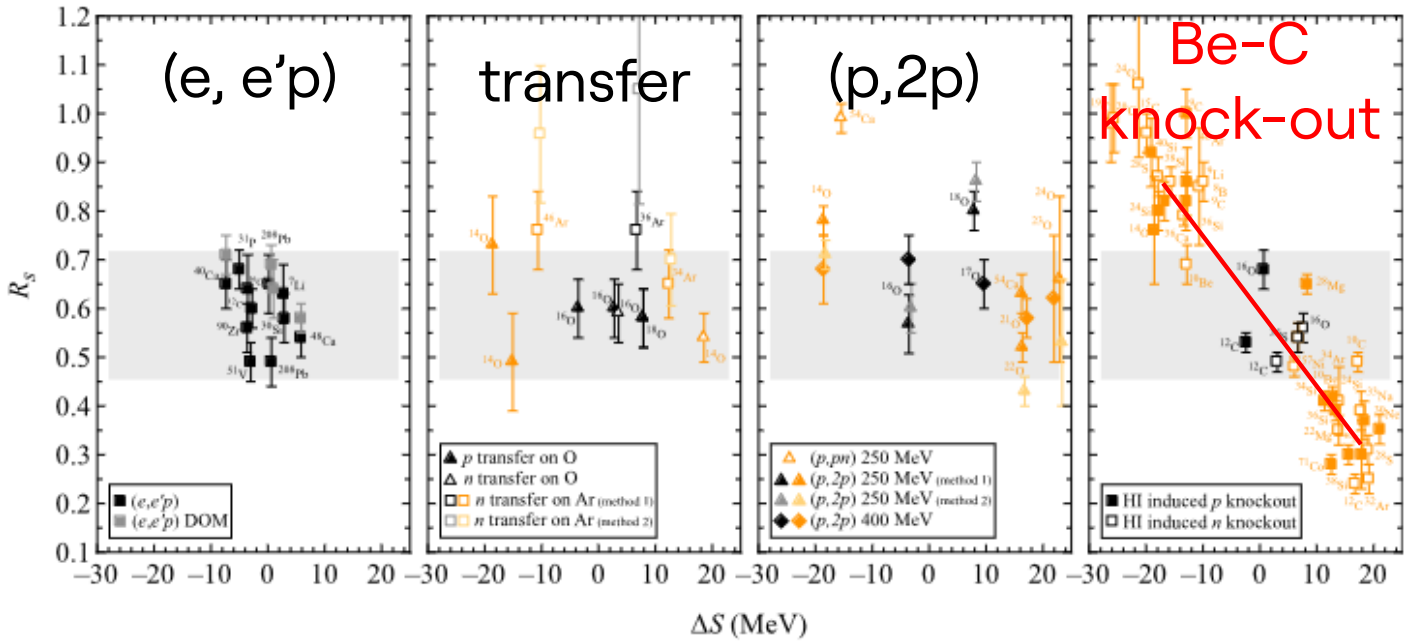
A long-standing puzzle

A trend with asymmetry $\Delta S \equiv S_n - S_p$ is found depending on the experimental **probe**!



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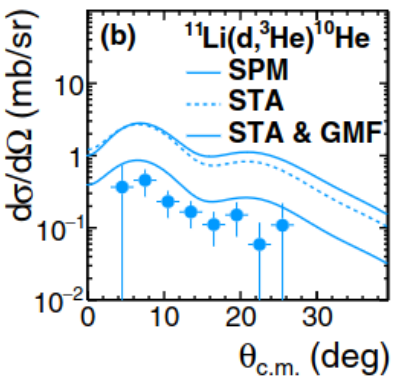
⇒ measure towards more exotic nuclei: ^{10,12}Be!

Importance of the overlaps

In a previous experiment by A. Matta and colleagues, for the $^{11}\mathrm{Li}(d,{}^{3}\mathrm{He})^{10}\mathrm{Be}$ reaction they found that the **geometrical mismatch factor** (GMF) plays an essential role.



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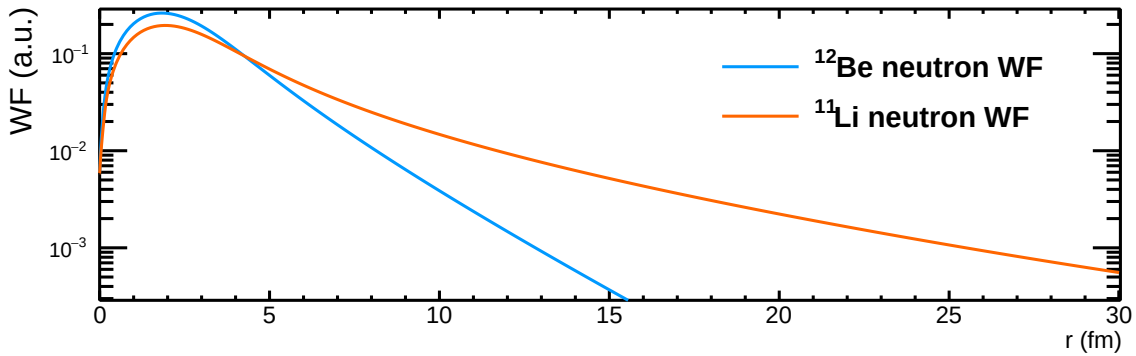

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