

Inelastic form factor of the ${}^4\text{He}(0^+)$ -Resonance

54th International Winter Meeting on Nuclear Physics

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
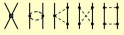








Studies of Light Nuclei

Why is the study of light nuclei so interesting?

Studies of Light Nuclei

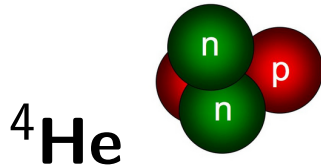
Why is the study of light nuclei so interesting?

- Inclusion of $3N$ -terms in ab-initio calculations in past decades
- High variation in predictions for Few-Body-Nuclei

	Two-nucleon force	Three-nucleon force	Four-nucleon force
LO		—	—
NLO		—	—
N ² LO		  	—
N ³ LO		 	

Studies of light nuclei

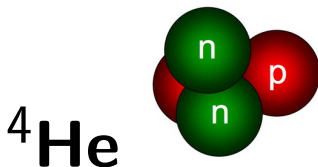
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Studies of light nuclei

^4He is a good way to test theory:

- Lightest nuclei with a narrow resonance
- Resonance has same quantum numbers like g.s. (0^+)
 - ↳ **High difference in spatial structure!**
- Isoscalar



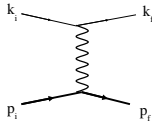
Electron Scattering on ${}^4\text{He}$

On the experimental side: How to explore nuclear dynamics with high precision?

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- Electromagnetic interaction is well understood
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On the experimental side: How to explore nuclear dynamics with high precision?

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- **Inclusive electron scattering on ${}^4\text{He}$ to determine $|F_{\text{inel.}}(q^2)|^2$**

