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Charge form factors of ^3He and ^3H in hybrid quark hadron model

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Abstract

The charge form factors of ^3He and ^3H are calculated for $0 \leq q^2 \leq 1$ (GeV/c)² in the hybrid quark hadron (HQH) model. The main parameter is the separation parameter, r_0 , between the internal quark cluster region and the external hadronic region, where solutions to the Faddeev equations are used. We find $r_0 = 1.0$ fm for ^3He . With no adjustment of parameters the ^3H charge form factor is fit quite well, testing the isospin nature of the long-range impulse and pion pair processes. The multi-quark cluster contributions play a major role, with the probability for a nucleon to be in a six-quark cluster being about 14%. The six-quark cluster has a radius of 1.2 fm.

There are no figures or tables for this document.

- 1 On leave from the Institute of High Energy Physics, Academia Sinica, Beijing, China.
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