

BOUND NUCLEON WAVE FUNCTION

$$\psi_B^{km}(\vec{p}) = \int d^3x e^{i\vec{p} \cdot \vec{x}} \psi_B^{km}(\vec{x})$$

$$\psi_B^{km}(\vec{x}) = \begin{pmatrix} g_k(x) \phi_k^m(\hat{x}) \\ i f_k(x) \phi_{-k}^m(\hat{x}) \end{pmatrix}$$

$$\phi_k^m(\hat{x}) = \sum_{m_l, m_s} \langle l m_l \frac{1}{2} m_s | j m \rangle Y_{l m_l}(\hat{x}) \chi_{m_s}$$

EIGENSTATE OF TOTAL ANGULAR MOMENTUM

$$j = |k| - 1/2$$

$$l = \begin{cases} k & k > 0 \\ -k-1 & k < 0 \end{cases}$$

SOLUTION OF DIRAC EQUATION

OBTAINED FROM A "WALECKA-TYPE"

LAGRANGIAN WITH σ, ω and ρ MESONS

WE USE EXPERIMENTAL VALUES OF
SINGLE SHELL ENERGIES