

Nucleon-Nucleon and ^3He - ^3He Potentials

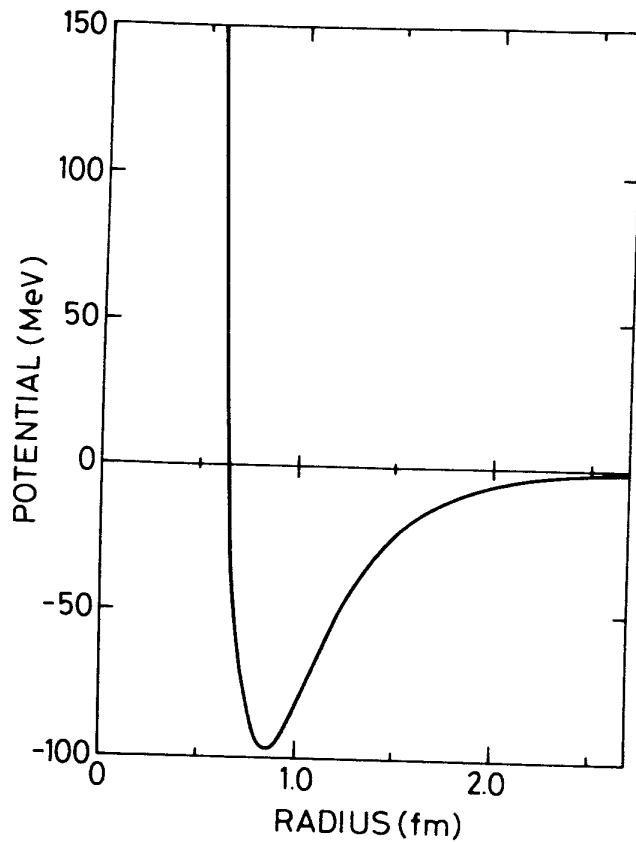
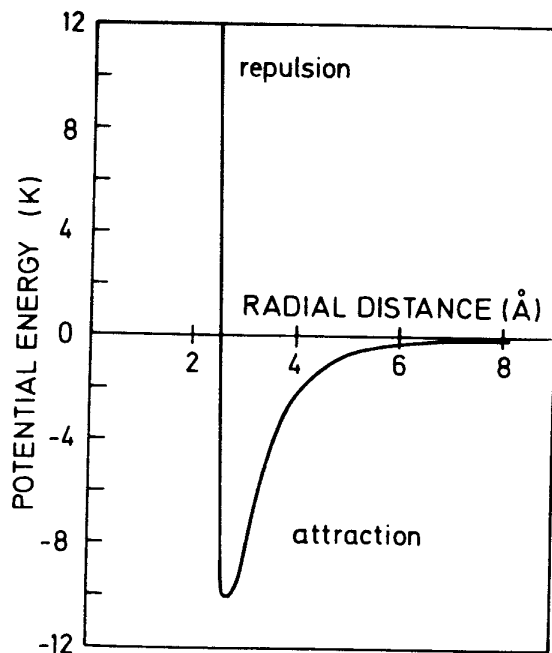


Figure 2.4b Phenomenology of nucleon-nucleon scattering for $L = S = 0$.

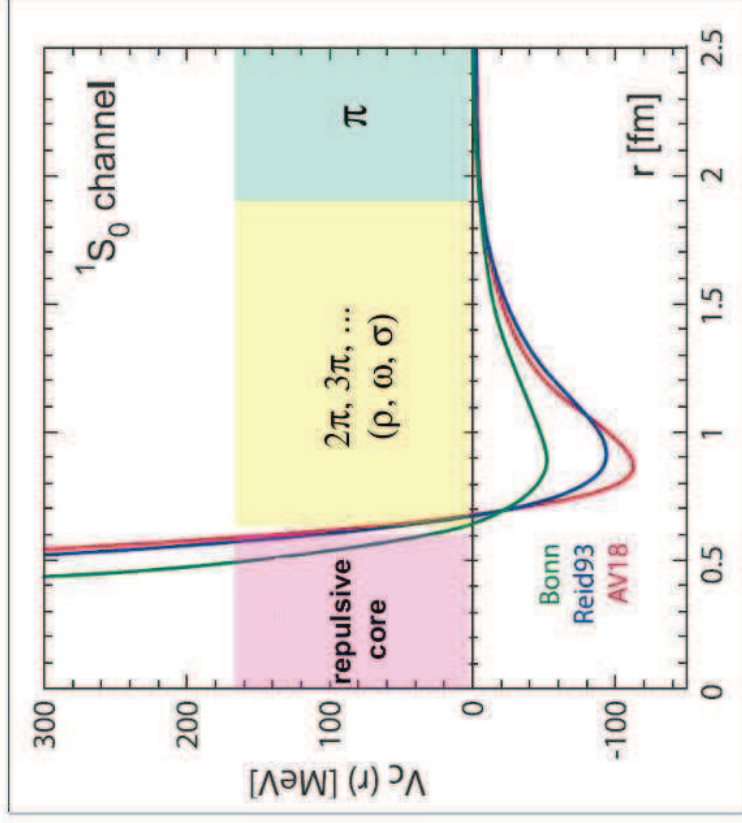
Reid's phenomenological potential (MeV) as a function of the nucleons' separation (fm).
 [From R. V. Reid] From Siemens and Jensen, "Elements of Nuclei"



From Vohrhardt and Wölfle,
 "The Superfluid Phases
 of Helium 3"

Figure 2.4 Interaction potential of two ^3He atoms as a function of separation.

Phenomenological NN potentials

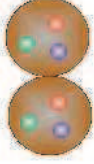


One-pion exchange
by Yukawa (1935)



Multi-pions

by Taketani (1951)



Repulsive core

by Jastrow (1951)



NN central potential $V_c(r)$ for $m_\pi = 0.53$ GeV

$^1S_0, ^3S_1$

