

Abstract for an Invited Paper
for the APR06 Meeting of
The American Physical Society

Three-nucleon forces: new developments

EVGENY EPELBAUM, Thomas Jefferson National Accelerator Facility

It is well known from microscopic few- and many-body studies that three-nucleon forces are important for quantitative understanding of various phenomena in nuclear physics. Three-nucleon forces that cannot be reduced to pair-wise nucleon-nucleon interactions arise naturally in the context of meson-exchange theory and at the more fundamental level of QCD. Chiral effective field theory provides a powerful and promising approach to determine two-, three- and more-nucleon forces in a systematic way based on the approximate and spontaneously broken chiral symmetry of QCD. Recent developments along these lines will be discussed. Future directions in this field will be outlined.