PHYS 560: Assignment 3

Martin J. Savage

October 18, 1999

Abstract

The third assignment for **Nuclear Physics**, PHY560, Autumn 1999.

October 1999.

1 Question1: Phenomenological NN Potentials

As we are still unble to derive the interaction between two nucleons from the underlying theory of strong interactions, QCD, phenomenological potentials are constructed and used to make predictions in multi-nucleon systems.

Discuss the physics content and successes of phenomenological nucelon-nucleon potentials, such as the *Bonn Potential*, *Hamada-Johnston Potential*, the *Reid Hard* and *Soft Core Potentials* and the *Argonne* V_{18} Potential.