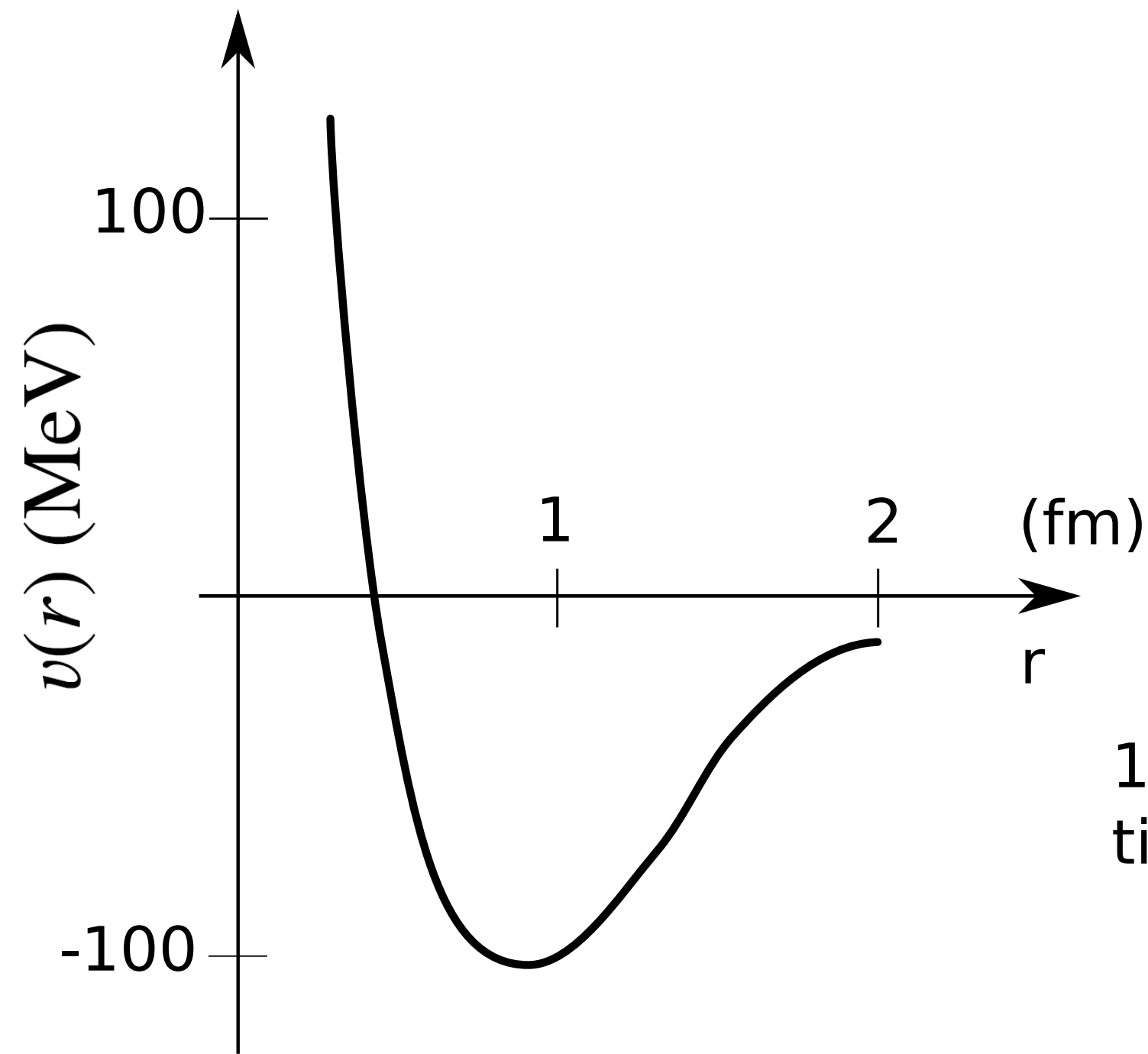


1S_0 interaction



$$Q = \frac{\hbar^2}{M_n a^2} \frac{1}{|v_0|}; \quad M_n = 0.939 \text{ GeV}/c^2$$

$$a \approx 0.9 \text{ fm (range)}$$

$$v_0 \approx -100 \text{ MeV (depth)}$$

$1S_0$: interaction between two nucleons in state
time reversal with $S=L=0$, and thus in a single

(QM: ZPF ($\Delta p_x \Delta x \geq \hbar$))