

Halo Nuclei

Novel structural feature of extremely n-rich and p-rich nuclei discovered in 1985 (e.g. ^{11}Li , $^{11,14}\text{Be}$, ^{19}C , ^8B)

Key parameter:
neutron separation energies S_n

Asymptotic wave function: $\Phi(r) \propto \exp(-\sqrt{2\mu S_n} \cdot r / \hbar)$

s-state ($l = 0$): $\langle r^2 \rangle \simeq \frac{\hbar^2}{4\mu S_n}$

