type are provided by $N=6$ (parity in- ③ $\boxed{box 4}$ version) isotones. In particular, by ^{11}Li, in which case the strongly renormalized $s_{1/2}$ and $p_{1/2}$ valence orbitals are a virtual and a resonant state lying at ≈ 0.1 and 0.6 MeV in the continuum, respectively. In keeping with the fact that the binding provided to a pair of fermions moving in time reversal states by a contact pairing interaction (δ-force) is (cf. e.g. Eq. (2.12) Brink and Broglia (2005)) $E_0 = -(2j+1)/2\, V_0\, I(j) \approx -\frac{(2j+1)}{2} V_0 \frac{3}{R^3}$, the ratio

$$r = \frac{2}{(2j+1)}\left(\frac{R_0}{R}\right)^3,$$

where $R_0 = 1.2 A^{1/3}$ fm $= 2.7$ fm ($A=11$), and $R = \sqrt{\frac{5}{3}} \langle r^2\rangle^{1/2}_{^{11}Li} = \sqrt{\frac{5}{3}}\ 3.74$ fm $= 4.6$ fm are the radius of a stable nucleus of mass $A=11$ (systematics), while R is the measured one, while j is the angular momentum representative for a nucleus of mass $A=11$ ($j \sim k_F R_0 \approx 3$-4), one obtains $r = 0.06$.
Making use of the multipole expansion of a general interaction

$$v(|\vec{r}_1 - \vec{r}_2|) = \sum_\lambda V_\lambda(r_1, r_2)\, P_\lambda(\cos\theta_{12}),$$

Because the function P_λ drops from its maximum at $\theta_{12}=0$ in an angular distance $1/\lambda$, particles 1 and 2 interact through the