component λ of the force, only $\boxed{\text{Box 4}}$ (3)
if $r_{12} = |\vec{r}_1 - \vec{r}_2| < R/\lambda$, where R is the mean value of the radii $\vec{r}_1$ and $\vec{r}_2$. Thus, as λ increases, the effective force range decreases. For a force of range much greater than the nuclear size, only the $\lambda = 0$ term is important. At the other extreme, a δ-function force has coefficients $V_\lambda(r_1, r_2)$ $\left(= \frac{(2\lambda+1)}{4\pi r_1^2}\delta(r_1 - r_2)\right)$ that increase with λ.

In the case of $^{11}Li(gs)$ we are thus forced to accept the need for a long range, low λ pairing interaction, as responsible for the binding of the dineutron, halo Cooper pair to the ^{9}Li core. This is equivalent to saying, an induced pairing interaction arising from the exchange of vibrations with low λ-value.

Boostrap Cooper pair binding

Within the s,p subspace, the most natural long wavelength vibration is the dipole mode. From systematics, the centroid of these vibrations is $\hbar\omega_{GDR} \approx 100\,\text{MeV}/R$, R being the nuclear radius. Thus, in the case of ^{11}Li, one expects the centroid of the Giant Dipole Resonance carrying $\approx 100\%$ of the Energy weighted sum rule (EWSR) at $\hbar\omega_{GDR} \approx 100\,\text{MeV}/2.7 \approx 37\,\text{MeV}$. Now, such a high frequency mode can hardly be expected to give rise to anything, but polarization effects. On the other hand, there exists experimental evidence which testifies to the presence of a rather sharp dipole state with centroid at $\approx 1\,\text{MeV}$ and carry $\approx 10\%$ of the