and that the EWSR associated with the ^{11}Li pigmy resonance is $\approx 10\%$ of the total Thomas-Reiche-Kuhn sum rule one can write,

$$0.1\,\frac{\hbar^2 A}{2M} = \frac{1}{K_1}\left[(0.5\,\text{MeV})^2 - (\hbar\omega_{\text{pigmy}})^2\right],$$

and thus

$$(\hbar\omega_{\text{pigmy}})^2 = (0.5\,\text{MeV})^2 - 0.1\,\frac{\hbar^2 A}{2M}\,K_1,$$

where (see Bortignon et al (1998))

$$K_1 = -\frac{5V_1}{A\langle r^2\rangle}\left(\frac{2}{11}\right) = -\frac{125\,\text{MeV}}{A\times 100\,\text{fm}^2}\left(\frac{2}{11}\right) \approx -\frac{2.5}{A^2}\,\text{fm}^{-2}\,\text{MeV},$$

the ratio in parenthesis reflecting the fact that only 2 out of 11 nucleons, sloshback and forth in an extended configuration with little overlap with the other nucleons. One then obtains,

$$-0.1\,\frac{\hbar^2 A}{2M}\,K_1 = 0.1\times 20\,\text{MeV fm}^2\,A\times\frac{2.5}{A^2}\,\text{fm}^{-2}\,\text{MeV}$$
$$\approx 0.45\,\text{MeV} \approx (0.7\,\text{MeV})^2$$

Consequently

$$\hbar\omega_{\text{pigmy}} = \sqrt{(0.5)^2+(0.7)^2}\,\text{MeV} \approx 1\,\text{MeV},$$