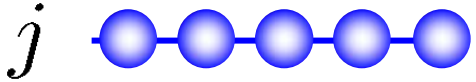
# One particle coefficients of fractional parentage

The following low seniority cfps are useful in calculating nucleon pickup and stripping reaction spectroscopic factors in the IPM




$$((j^{n-1})b, j; a|\}(j^n)\, a)$$

seniority 1 ← seniority 0

$$((j^{n-1})j, j; 0|\}(j^n)\, 0) = 1, \quad n = \text{even}$$

seniority 0 ← seniority 1

$$((j^{n-1})0, j; j|\}(j^n)\, j) = \left(\frac{2j+2-n}{n(2j+1)}\right)^{\frac{1}{2}}, n = \text{odd}$$

seniority 2 ← seniority 1

$$((j^{n-1})J, j; j|\}(j^n)\, j) = -\left(\frac{2(n-1)(2J+1)}{n(2j-1)(2j+1)}\right)^{\frac{1}{2}}, n = \text{odd}$$

seniority 1 ← seniority 2

$$((j^{n-1})j, j; J|\}(j^n)\, J) = \left(\frac{2(2j+1-n)}{n(2j-1)}\right)^{\frac{1}{2}}, n = \text{even}$$