

$$\begin{aligned}
X|Y|Z: \quad & {}^X F_Y + {}^{X+Y} F_Z \sim {}^X F_{Y+Z} {}^Y F_Z \\
A|B| - B \Rightarrow & {}^A F_B + {}^{A+B} F_{-B} \sim {}^A F_0 + {}^B F_{-B} = 0 \\
-A|A|B \Rightarrow & 0 = {}^{-A} F_A + {}^0 F_B \sim {}^{-A} F_{A+B} + {}^A F_B
\end{aligned}$$

$${}^A F_B \sim -(-1)^n {}^B F_A$$

$${}^A F_B \underset{11}{\sim} - {}^{-A} F_{A+B} \underset{1}{\sim} {}^{-A+\underline{A+B}} F_{-\underline{A+B}} = {}^B F_{-\underline{A+B}} = (-1)^n {}^{-B} F_{A+B} \underset{11}{\sim} - (-1)^n {}^B F_A$$

$$A|B| \frac{-B}{2} \Rightarrow {}^A F_B + {}^{A+B} F_{-B/2} \sim {}^A F_{B/2} + {}^B F_{-B/2} \Rightarrow {}^A F_B \sim {}^A F_{B/2} - {}^{A+B} F_{-B/2}$$

$$\frac{-A}{2} |A|B \Rightarrow {}^{-A/2} F_A + {}^{A/2} F_B \sim {}^{-A/2} F_{A+B} + {}^A F_B \Rightarrow$$

$${}^A F_B \sim {}^{A/2} F_B - {}^{-A/2} F_{A+B} \sim {}^{A/2} F_{B/2} - \underbrace{{}^{B+A/2} F_{-B/2}}_{\sim -{}^{A+B/2} F_{B/2}} - \underbrace{{}^{-A/2} F_{\underline{A+B/2}}}_{\sim -{}^{A/2} F_{B/2}} + \underbrace{{}^{B+A/2} F_{-\underline{A+B/2}}}_{\sim -{}^{B/2} F_{\underline{A+B/2}}}$$

$$\sim 2^{A/2} F_{B/2} + \underline{A+B/2} F_{B/2} - {}^{B/2} F_{\underline{A+B/2}} = 2^{1-n} {}^A F_B + \frac{-n}{2} {}^{A+B} F_B - \frac{-n}{2} {}^B F_{A+B}$$

$$\Rightarrow \underbrace{1 - \frac{1-n}{2}}_{} {}^A F_B \sim \frac{-n}{2} {}^{A+B} F_B - \frac{-n}{2} {}^B F_{A+B} \sim \frac{-n}{2} {}^{A+B} F_B + (-1)^n \frac{-n}{2} {}^{A+B} F_B = \frac{-n}{2} \underbrace{1 + (-1)^n}_{} {}^{A+B} F_B$$

$$n \text{ odd} \Rightarrow \underbrace{1 - \frac{1-n}{2}}_{} {}^A F_B \sim 0$$

$$n \text{ even} \Rightarrow \underbrace{1 - \frac{1-n}{2}}_{} {}^{A-B} F_B \sim \frac{1-n}{2} {}^A F_B$$

$$\Rightarrow -{}^A F_{-B} \sim {}^{A-B} F_B \sim \frac{\frac{1-n}{2}}{1 - \frac{1-n}{2}} {}^A F_B \Rightarrow {}^A F_B \sim -\frac{1 - \frac{1-n}{2}}{\frac{1-n}{2}} {}^A F_{-B} \sim \frac{1 - \frac{1-n}{2}}{\frac{1-n}{2} \neq 1} {}^A F_B \Rightarrow {}^A F_B \sim 0$$