

$$\begin{aligned}
\chi_{i^-}^{-1} \left( \left\langle \begin{array}{c} \bullet i^+ \\ \vdots \\ \bullet \\ \leftarrow i^- \end{array} \right\rangle \right) &= \left\langle \begin{array}{c} \bullet i^+ \\ \vdots \\ \bullet \\ \bullet i^- \quad \bullet i^- \end{array} \right\rangle + \frac{1}{2} \chi_{i^-}^{-1} \left( \left\langle \begin{array}{c} \bullet i^+ \\ \vdots \\ \bullet \\ \leftarrow i^- \quad \leftarrow i^- \end{array} \right\rangle - \left\langle \begin{array}{c} \bullet i^+ \\ \vdots \\ \bullet \\ \bullet i^- \end{array} \right\rangle \right) = -\frac{1}{2} \chi_{i^-}^{-1} \left( \left\langle \begin{array}{c} \bullet i^+ \\ \vdots \\ \bullet \\ \bullet \\ \bullet \\ \leftarrow i^- \end{array} \right\rangle \right) \\
&= -\frac{1}{2} \left\langle \begin{array}{c} \bullet i^+ \\ \vdots \\ \bullet \\ \bullet \\ \bullet \\ \bullet \\ \leftarrow i^- \end{array} \right\rangle.
\end{aligned}$$