

$$\check{U}_g \psi = \bar{\Lambda}^{-1} U_g \Lambda \psi$$

$$\check{U}_w \psi = \bar{\Lambda}^{-1} U_w \Lambda \psi = \Lambda \left(\nu \ell_w + \partial_{\check{w}} - \partial_w \right) \Lambda \psi$$

$$\phi_{\check{\mu}} \check{U}_w \psi = \overline{\partial_w \Lambda \phi} \check{\nu} \Lambda \psi - \Lambda \phi \check{\nu} \overline{\partial_w \Lambda \psi}$$

$$\text{LHS} = \Lambda \phi \check{\nu} \Lambda \check{U}_w \psi = \overline{\Lambda \phi \check{\nu} U_w \Lambda \psi} = \text{RHS}$$

$$\overline{\Lambda \phi_m \check{\nu} \partial_w \Lambda \psi_{m+}} = \Lambda_m \Lambda_{m+} \phi_m \check{\nu} \overline{\partial_w \psi_{m+}} = \frac{\Lambda_m \Lambda_{m+}}{(\nu)_m} \phi_m \check{Z} \overline{\partial_w \psi_{m+}}$$