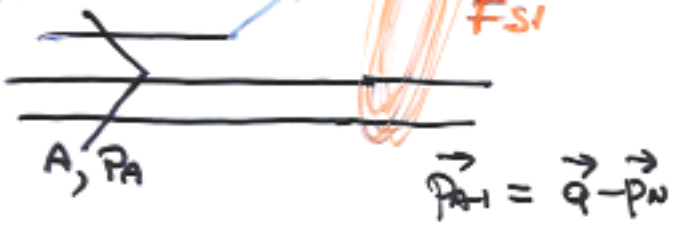

-) ν interacts only with one nucleon, which is then emitted, the remaining (A-1) being spectators
-) the nuclear current is the sum of single nucleon ones
-) the nuclear states are described in an Independent Particle Model (→ Relativistic Shell Model) → MADRID SEVILLA

We assume (A-1) is left in a discrete state
(→ in the following → hole in closed shell nje)

$$W^{\mu\nu} = \overline{\Sigma} \delta(E_A + \omega - E_N - E_{A-1}) \langle N, A-1 | J^{\mu}(q) | A \rangle^* \langle N, A-1 | J^{\nu}(q) | A \rangle$$

$$\langle N, A-1 | J^{\nu}(q) | A \rangle \xrightarrow{\text{DWIA}} \int d\vec{r}\, e^{i\vec{q}\cdot\vec{r}}\, \chi^{(-)}_{p_N S_N}(\vec{r})\, \hat{J}^{\mu}_{\substack{\text{single} \\ \text{nucleon}}}\, \varphi_\beta(\vec{r})\, A_j$$

$$\xrightarrow{\text{PWIA}} \sqrt{\frac{m_N}{E_N}}\, \bar{u}(p_N S_N) \int d^3r\, e^{i\vec{p}\cdot\vec{r}}\, \hat{J}^{\mu}_{s.n}\, \varphi_\beta(\vec{r})\, A_j$$

A_j → spectroscopic amplitudes → $\sqrt{2j+1}$ ⋅ removal from closed shell j