Nuclear model uncertainties

So far we have considered scattering on free nucleons. In general nucleons are bound inside nuclei and even if the dominant process is "quasi-free" scattering, effects of nuclear structure must be taken into account.

We can employ the same model (DWIA+Relatvistic Sell Model) already used to study nuclear structure and FSI effects in the quasielastic CC neutrino-nucleus cross section.

In this case we consider $\frac{d\sigma}{dT_N}$ with $\langle |Q^2| \rangle_{equiv} = 2m_N T_N$.

We find that, when FSI are considered, nuclera effects are too large to allow a determination of G_A^s.

However, when ratios of cross sections are considered, almost all effects vanish and a measurement of G_A^s seems possible.