

**Superscaling in neutrino/antineutrino
CCQE scattering from MiniBooNE
to NOMAD energies
Phys. Lett. B, 725, 170-174 (2013)**

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1 Results

- SuSA results - Relevant kinematic region
- SuSA+MEC. Fully relativistic analysis (Preliminary)
- Form Factors' Parametrizations
- Monopole vs. Dipole Axial Form Factor
- ν_μ vs. ν_e CCQE Cross Section

ν_μ - ^{12}C CCQE scattering

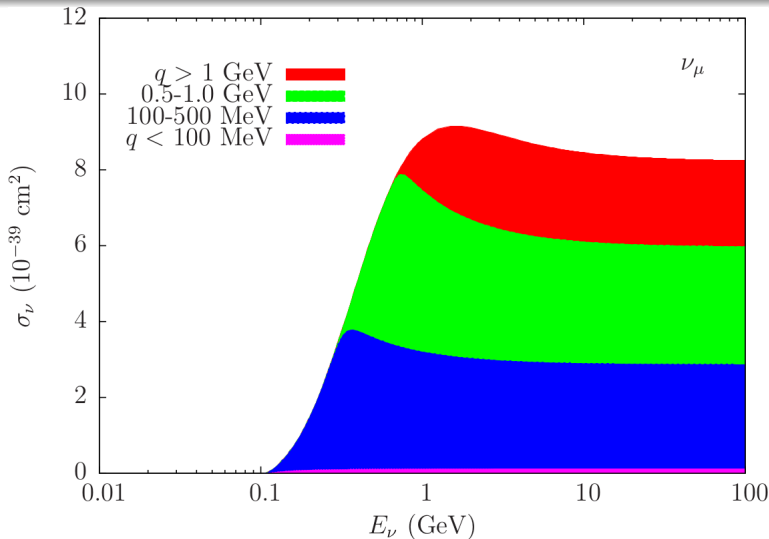
- These results are analyzed in detail in **Phys. Lett. B, 725, 170-174 (2013)** and also in [forthcoming publications](#).

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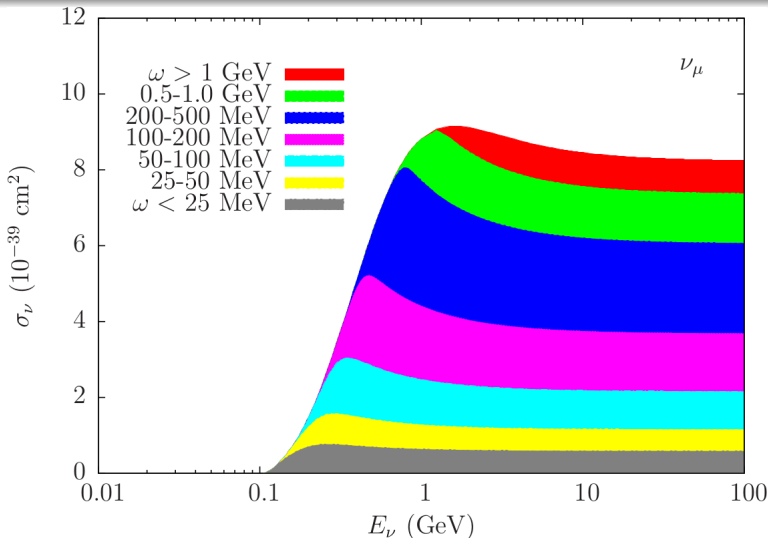
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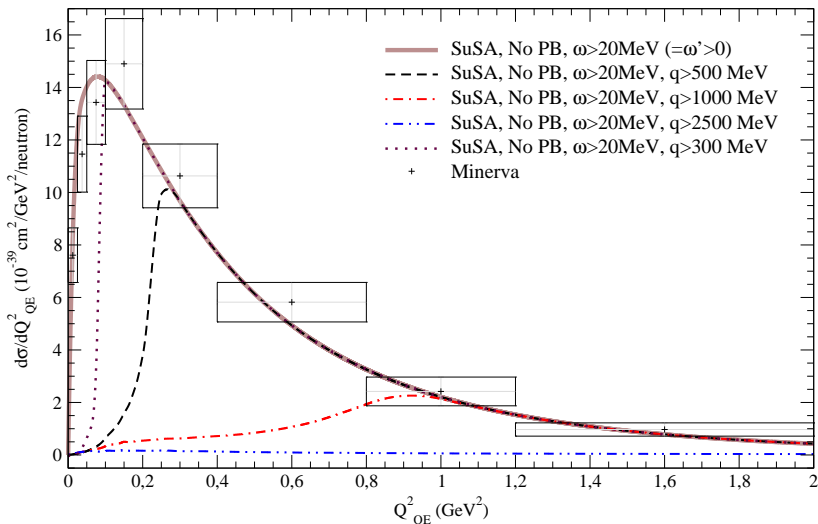
ν_μ - ^{12}C CCQE scattering - Cuts on q



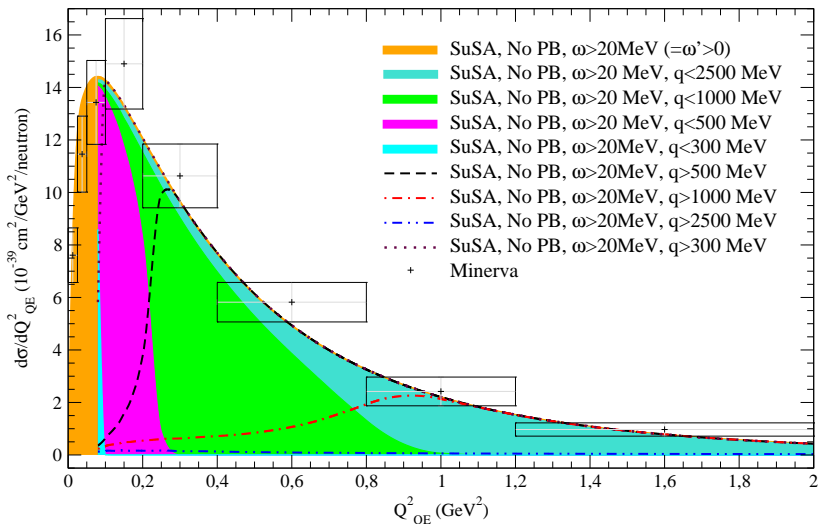
ν_μ - ^{12}C CCQE scattering - Cuts on ω



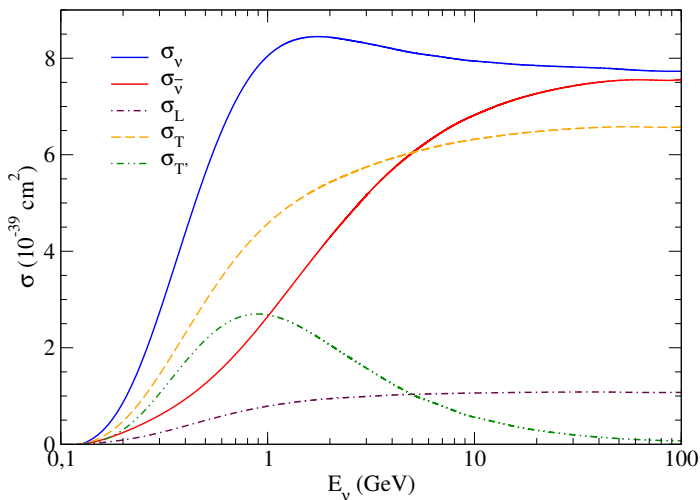
ν_μ - ^{12}C CCQE $d\sigma/dQ_{QE}^2$ at MINER ν A kinematics



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Separated Contributions in the SuSA Model



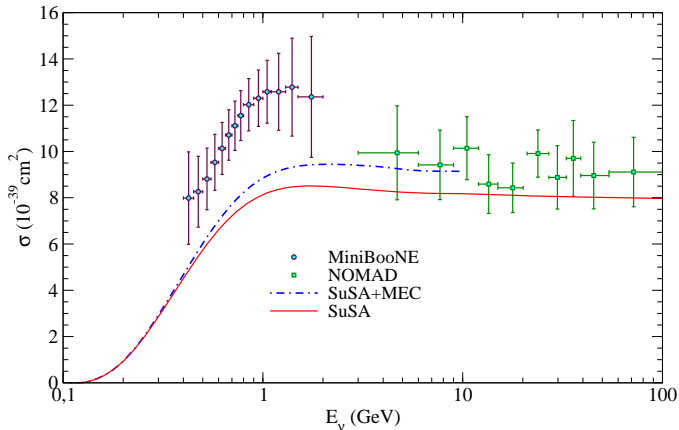
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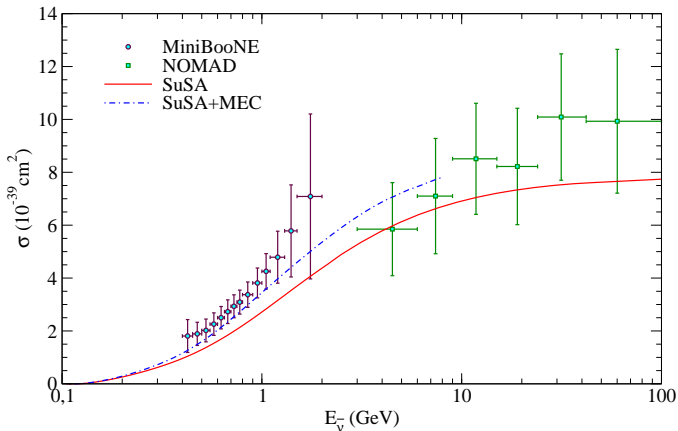
$\nu_\mu - {}^{12}\text{C}$ SuSA+MEC (Preliminary)

The fully relativistic treatment of the MEC is only developed for the vector-vector T channel (T_{VV}). Work is in progress to extend the MEC calculations to higher energies as well as to all channels (mainly T'_{VA} and T_{AA}), where it is important to remember that the T' response is peaked at $E_\nu \sim 1$ GeV and goes down at high energies.



$\bar{\nu}_\mu - {}^{12}\text{C}$ SuSA+MEC (Preliminary)

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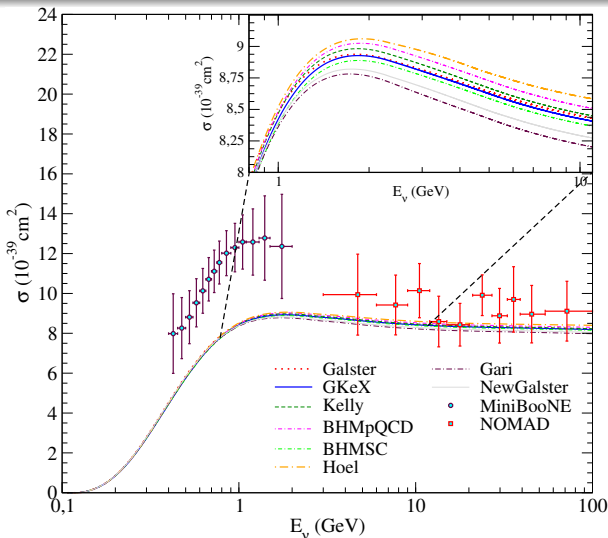


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Parametrization of the nucleon EM form factors

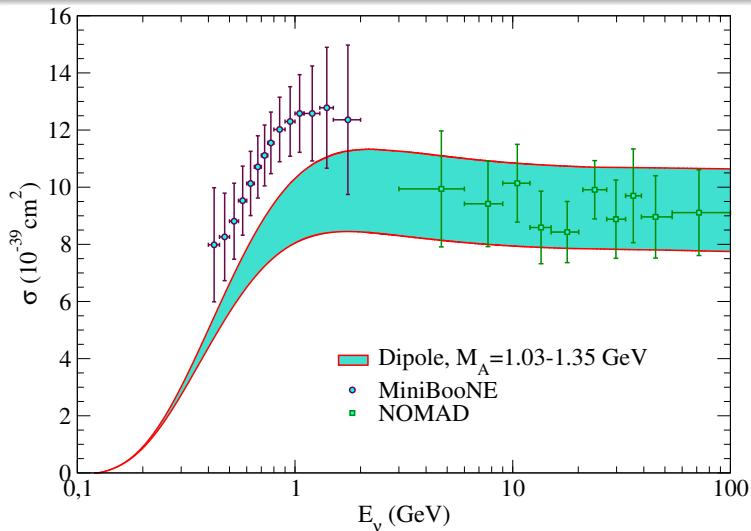


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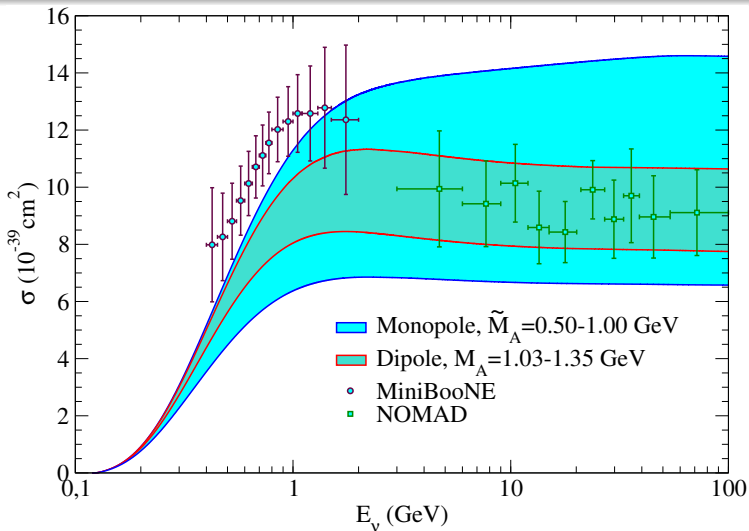
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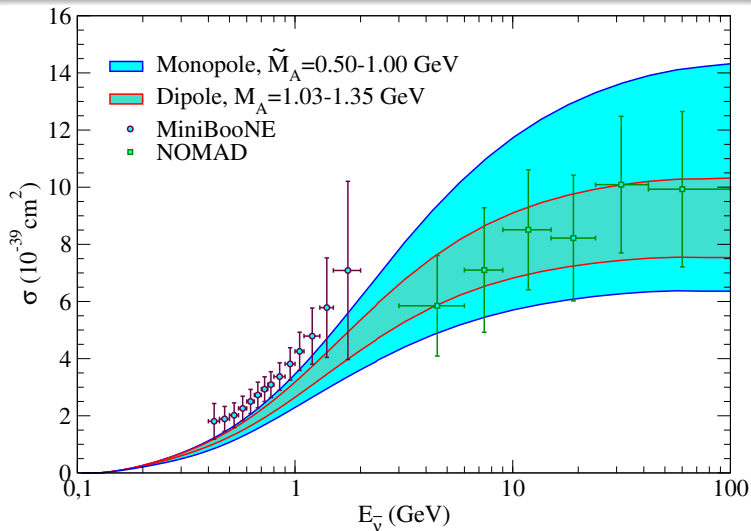
Dipolar axial form factor



Monopolar axial form factor



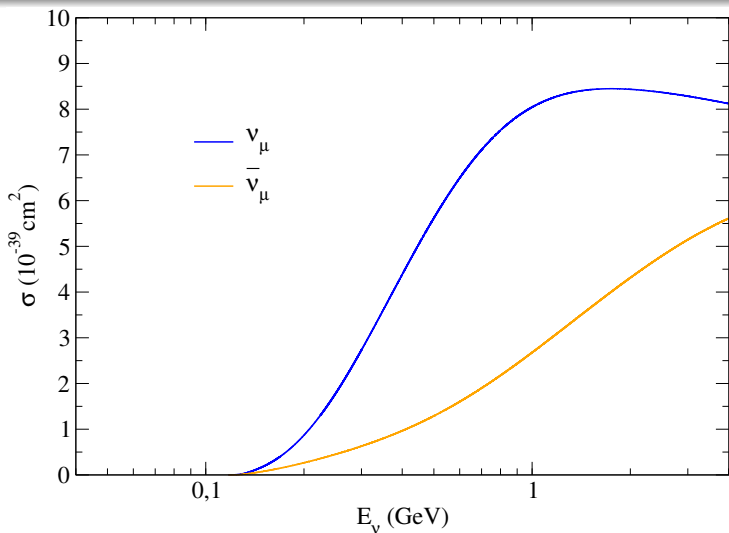
Monopolar axial form factor



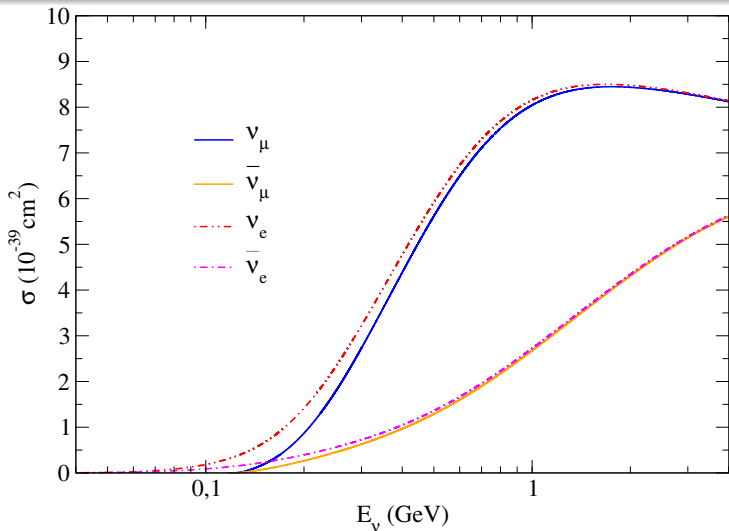
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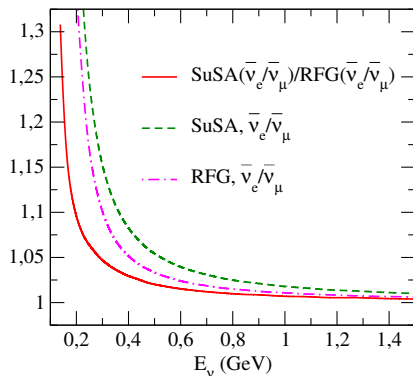
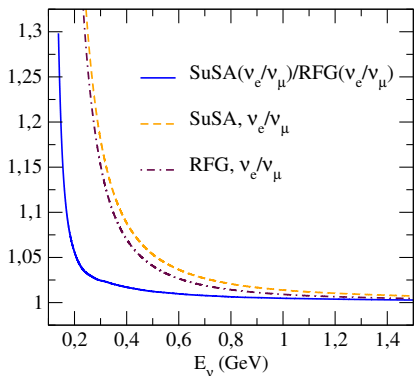
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