

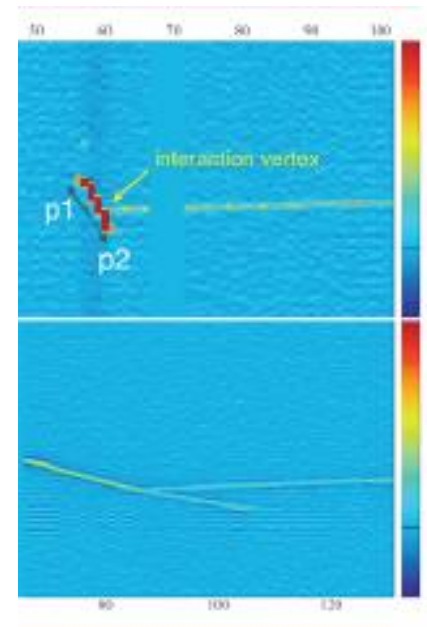
# eA and MEC - discussion



Thanks for a nice meeting!

Argoneut rings in powerful new experimental capability, e.g. high resolution study of the vertex region.

What should they measure?



*From Ornella Palamara*



So, what else do you neutrino folks need from eA?

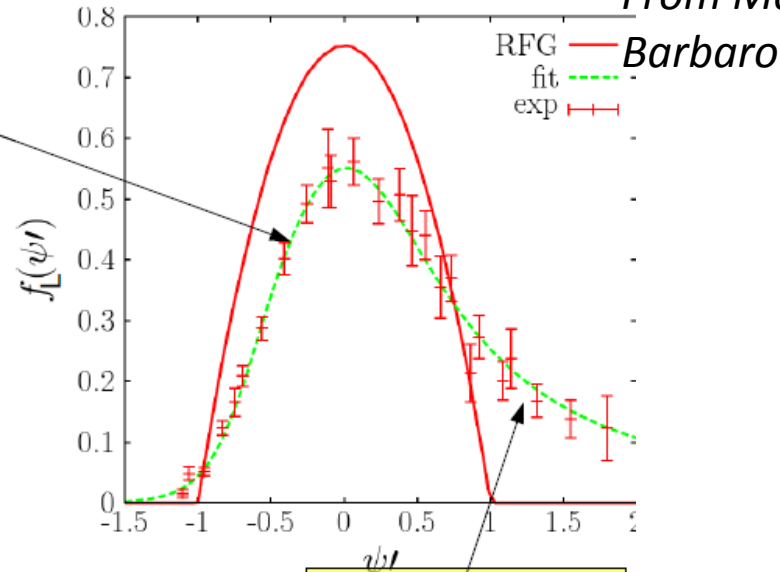
3. **Scaling violations**, particularly of I kind, occur **above the QEP** and reside mainly in the **transverse response**

4. The **longitudinal response** super-scales

A **phenomenological super-scaling function** has been extracted from the (e,e') word data [Jourdan, NPA603, 117 ('96)]

- **Asymmetric shape**: long tail at high energy transfer
- **Only 4 parameters** for all kinematics and all nuclei
- Represents a **strong constraint** on nuclear models

*From Maria*



The RFG is very poor: it does super-scale, but to the wrong function!

$$f_{RFG}(\psi) = \frac{3}{4}(1-\psi^2)\theta(1-\psi^2)$$

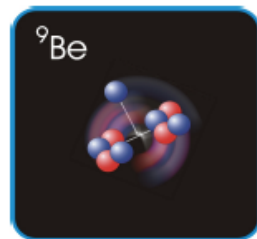
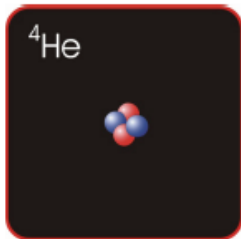
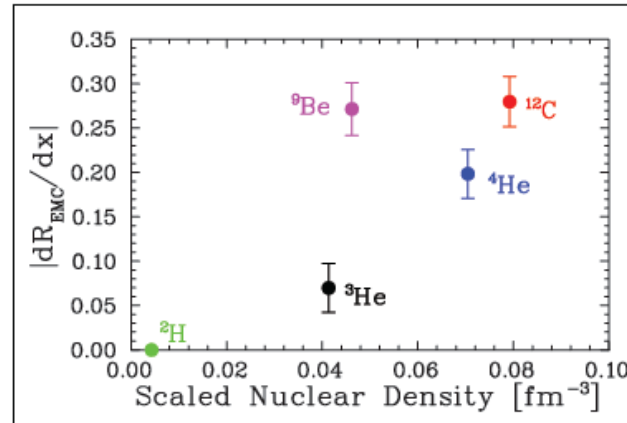
Can we finally get around to replacing the relativistic Fermi gas in our models with something better?

# EMC Effect and Local Nuclear Density

From Donal Day

${}^9\text{Be}$  has low average density

- Large component of structure is  $2\alpha+n$
- Most nucleons in tight,  $\alpha$ -like configurations
- EMC effect driven by **local** rather than **average** nuclear density



Scaled nuclear density =  $(A-1)/A \langle \rho \rangle$   
--> remove contribution from struck nucleon

$\langle \rho \rangle$  from ab initio few-body calculations  
- [S.C. Pieper and R.B. Wiringa, Ann. Rev. Nucl. Part. Sci 51, 53 (2001)]

Do we need to include local clustering in our models? Is it already there?

Is it important that neutrino event generators be validated on eA?  
Or is it neut important at all?

To what  $Q^2$  can we trust superscaling?

- Exact QMC calculations of sum rules and Euclidean responses in light nuclei, based on realistic interactions and currents

*Rocco Schiavilla*

Should we expect/hope to see calculations for carbon and oxygen?