

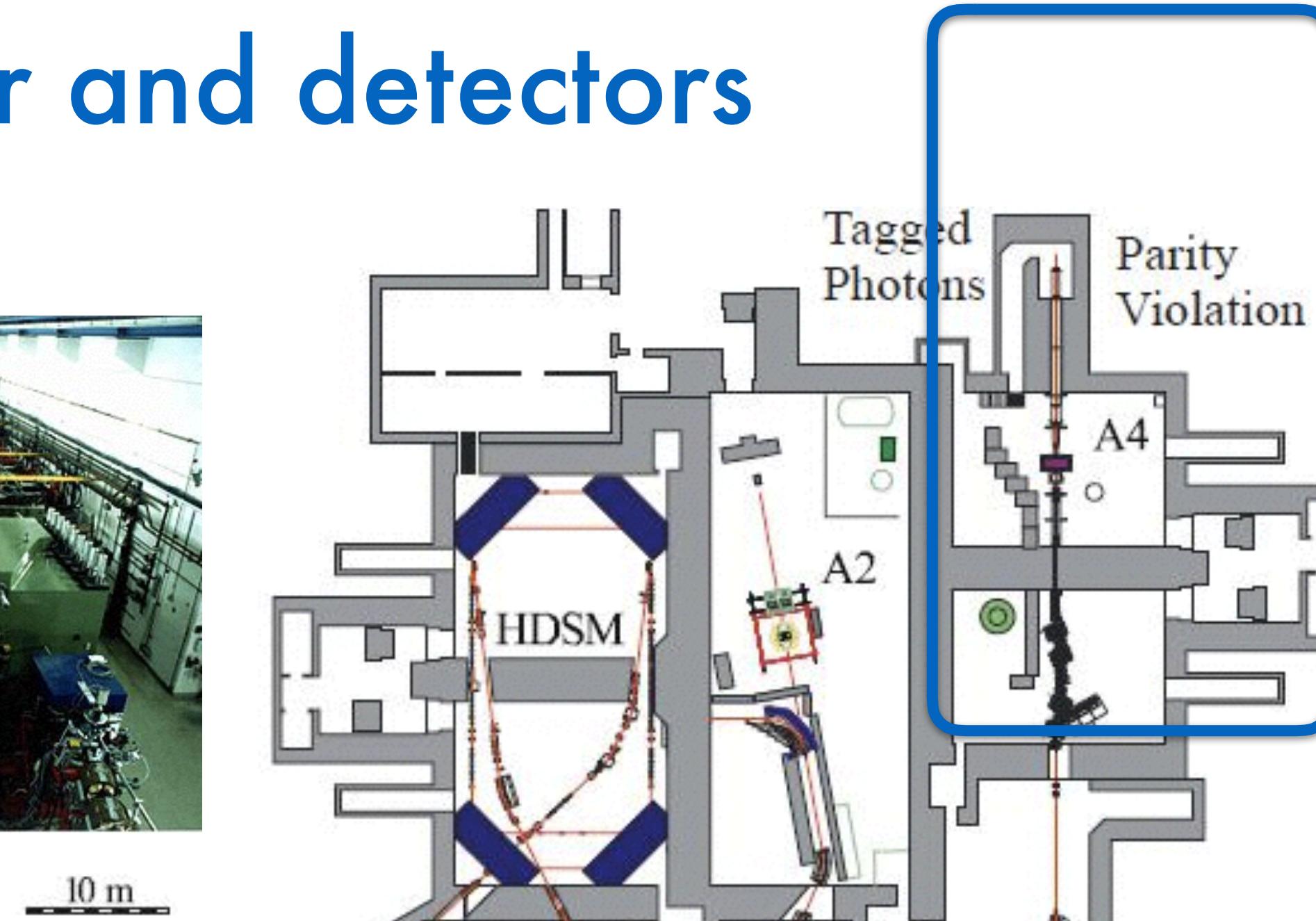
# Nuclear Cross Section Measurements at MAMI / MESA



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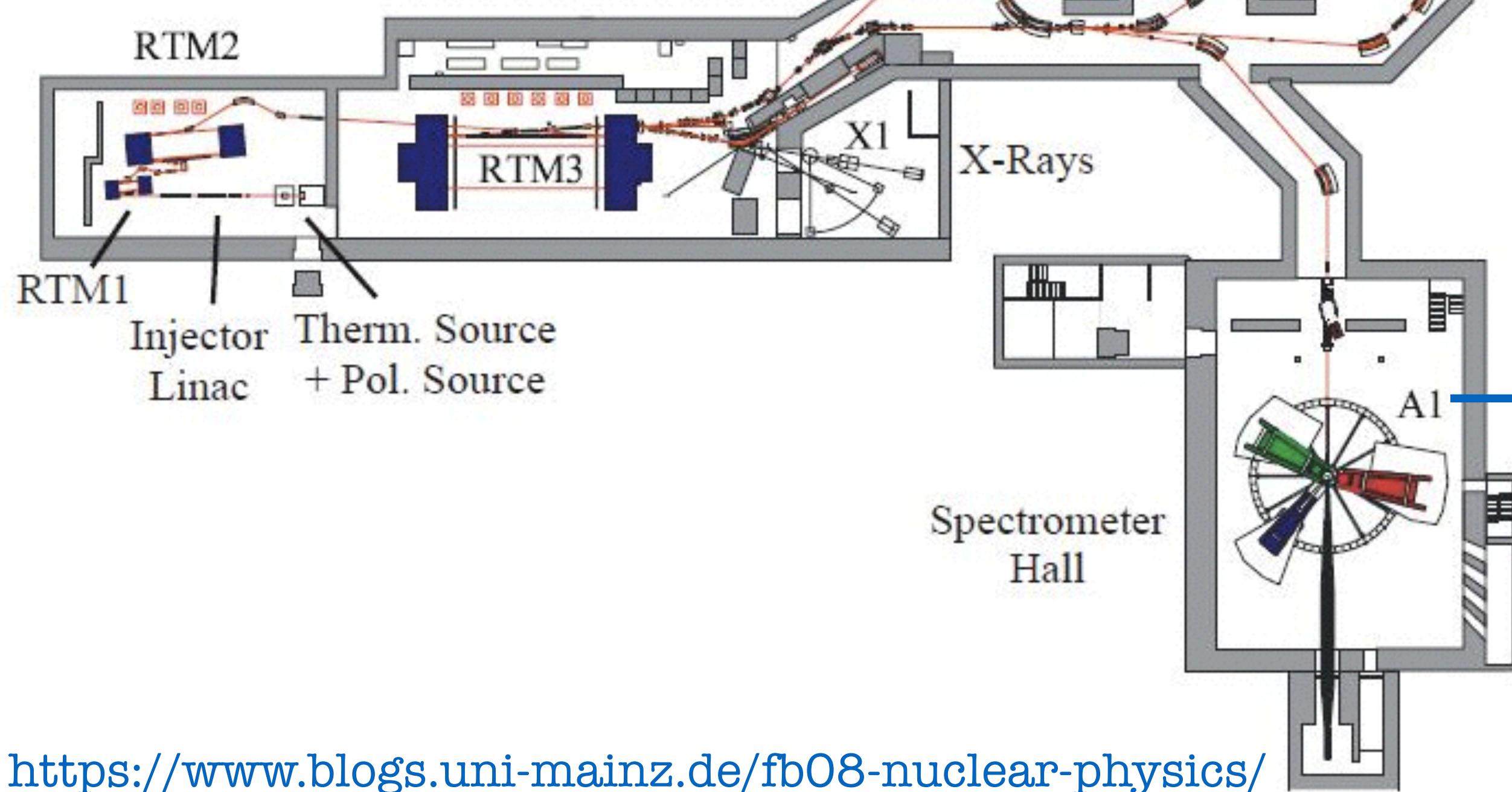
# Accelerator and detectors



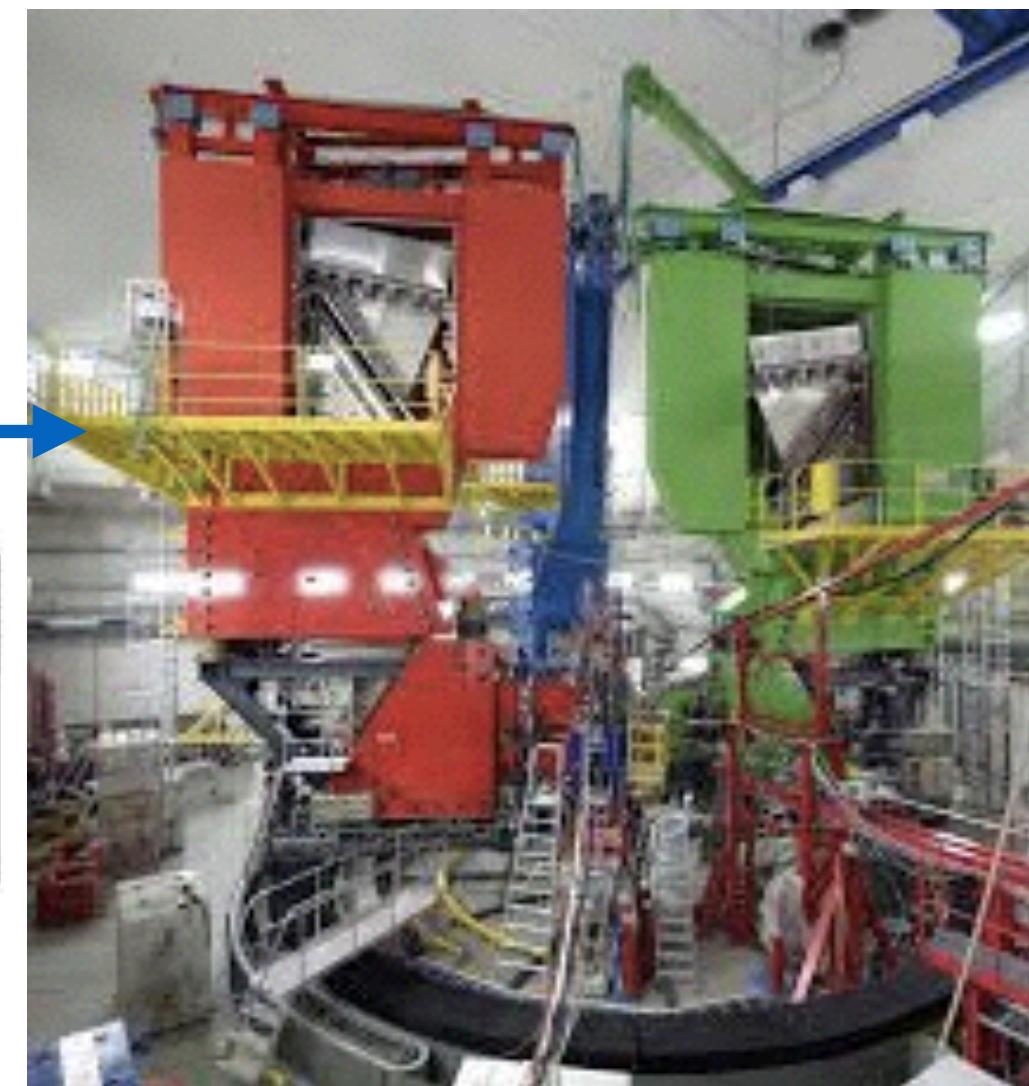
## MAMI Cascaded Microtrons

- \* Up to 1.6 GeV electron beam energy
- \* CW beam
- \* ~80% polarization
- \* 100 uA max. current
- \* Availability: >80%
- \* Future: MESA Accelerator (150 MeV)

<https://www.mesa.uni-mainz.de>



## A1 Collaboration

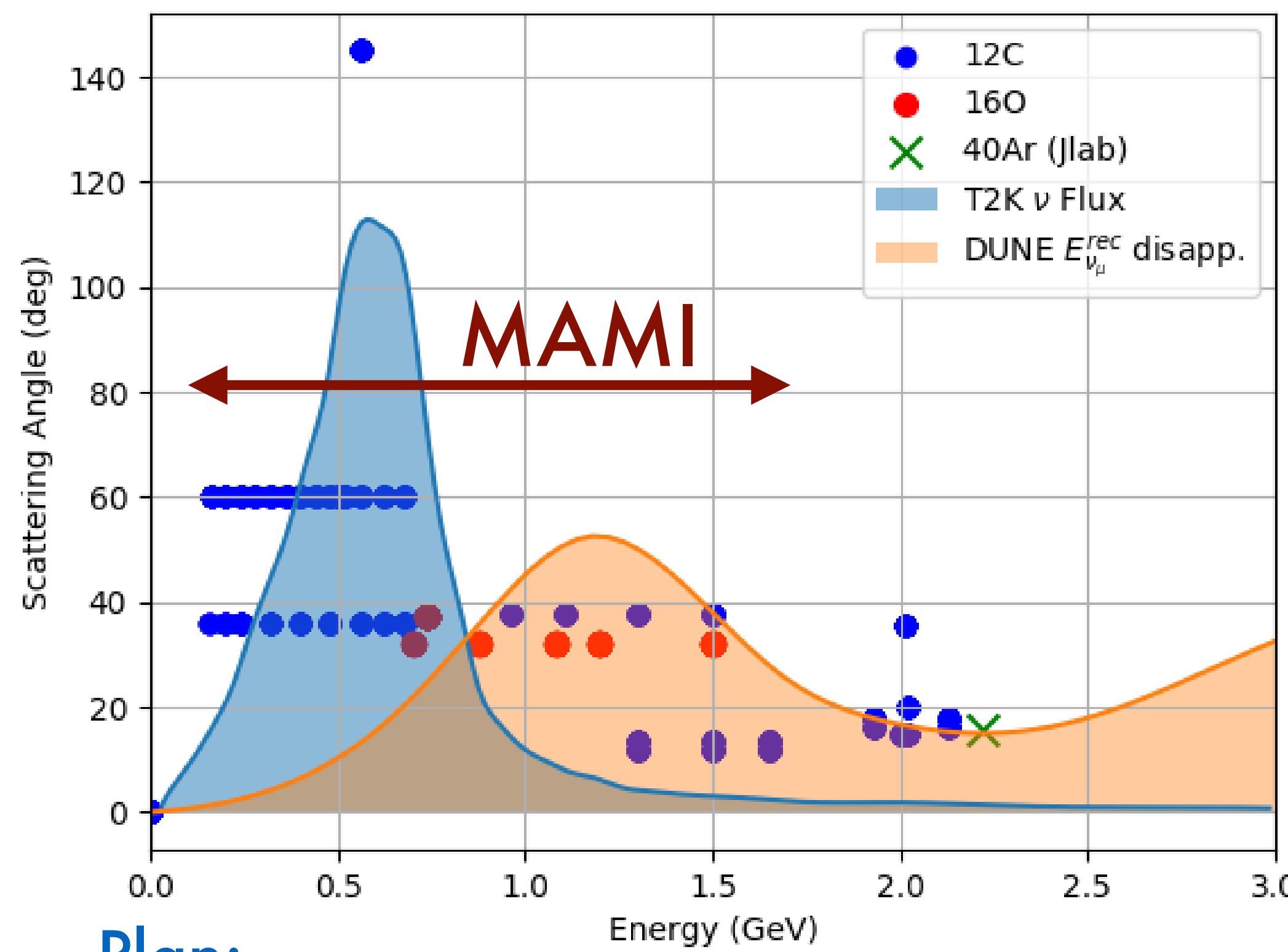


- \* 3 magnetic spectrometers
- \*  $10^{-4}$  mom. resolution
- \* time coincidence
- \* Targets:
  - \* Solid-state
  - \* cryogenic
  - \* gas-jet

[www.a1.kph.uni-mainz.de](http://www.a1.kph.uni-mainz.de)

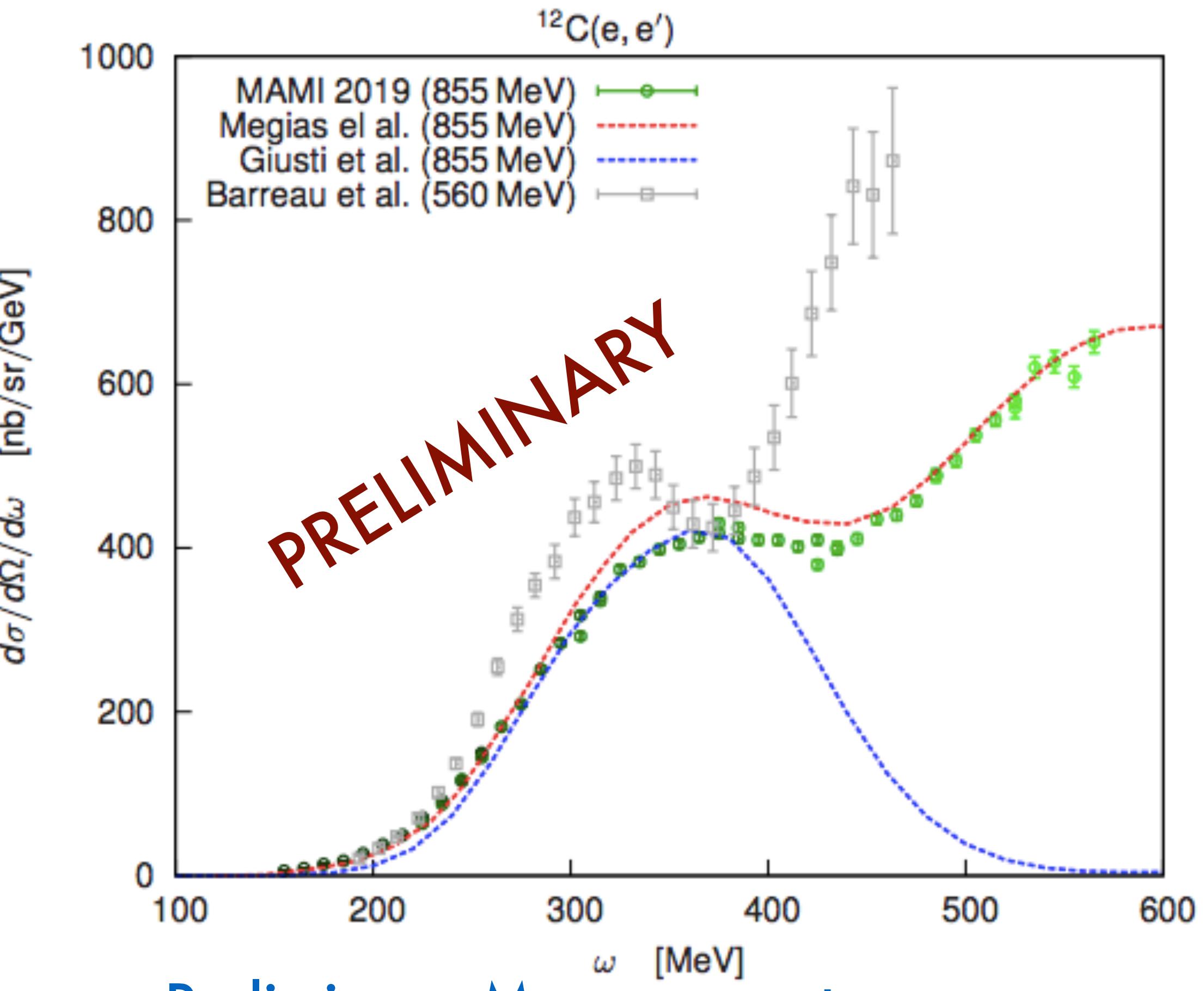
<https://www.blogs.uni-mainz.de/fb08-nuclear-physics/>

# Preliminary Results and Plans



Plan:

- \* Complete inclusive measurements on  $^{12}\text{C}$
- \* Exploit the gas-jet target: argon and oxygen
- \* Another possibility: Waterfall target (oxygen)
- \* Goal: inclusive and exclusive (1p,2p) cross sections
- \* Investigate possibilities for pion/neutron channels



Preliminary Measurements

- \* Obtained in few hours of measurement
- \*  $E=855 \text{ MeV}, \theta_e = 70^\circ$
- \* More data on type (analysis ongoing)
- \* Scheduled measurement Dec. 2020
- \* More measurements from 2022