

High Statistics Measurement of the Neutron's Electric Form Factor

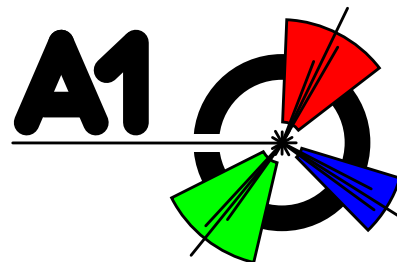
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Rouven Spreckels
on behalf of the A1 collaboration
at the Institute for Nuclear Physics in Mainz, Germany

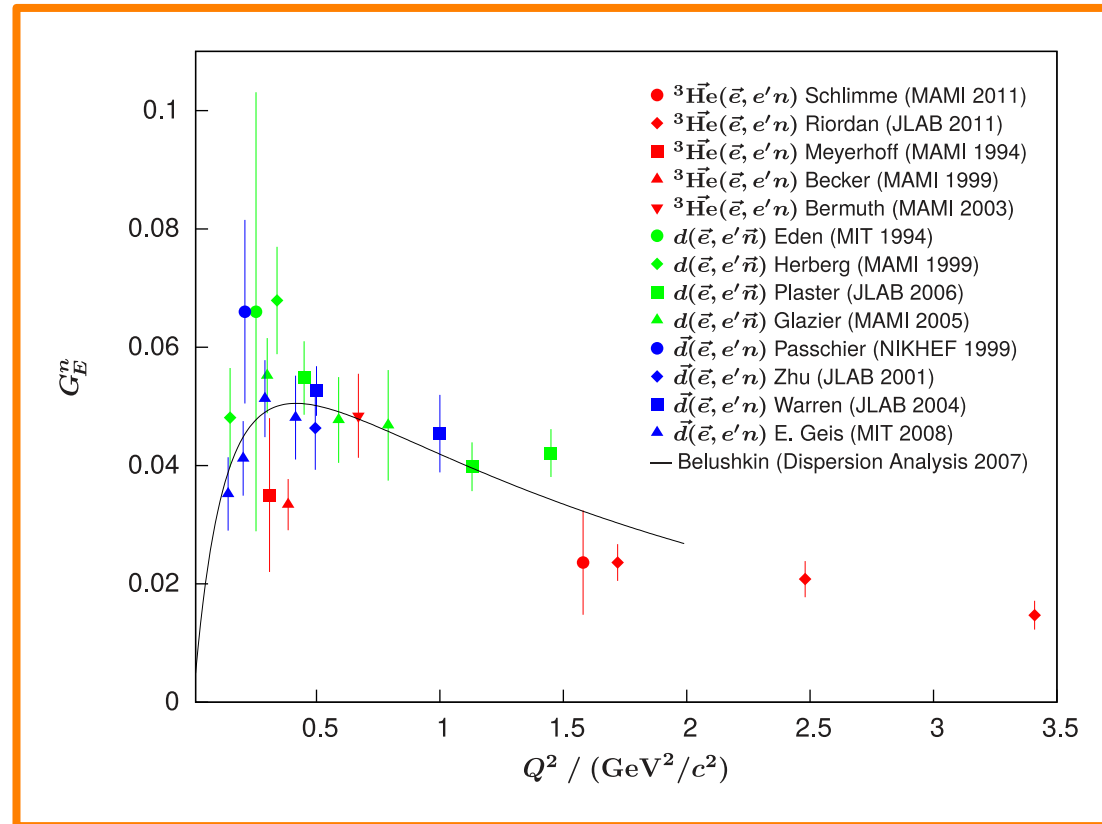


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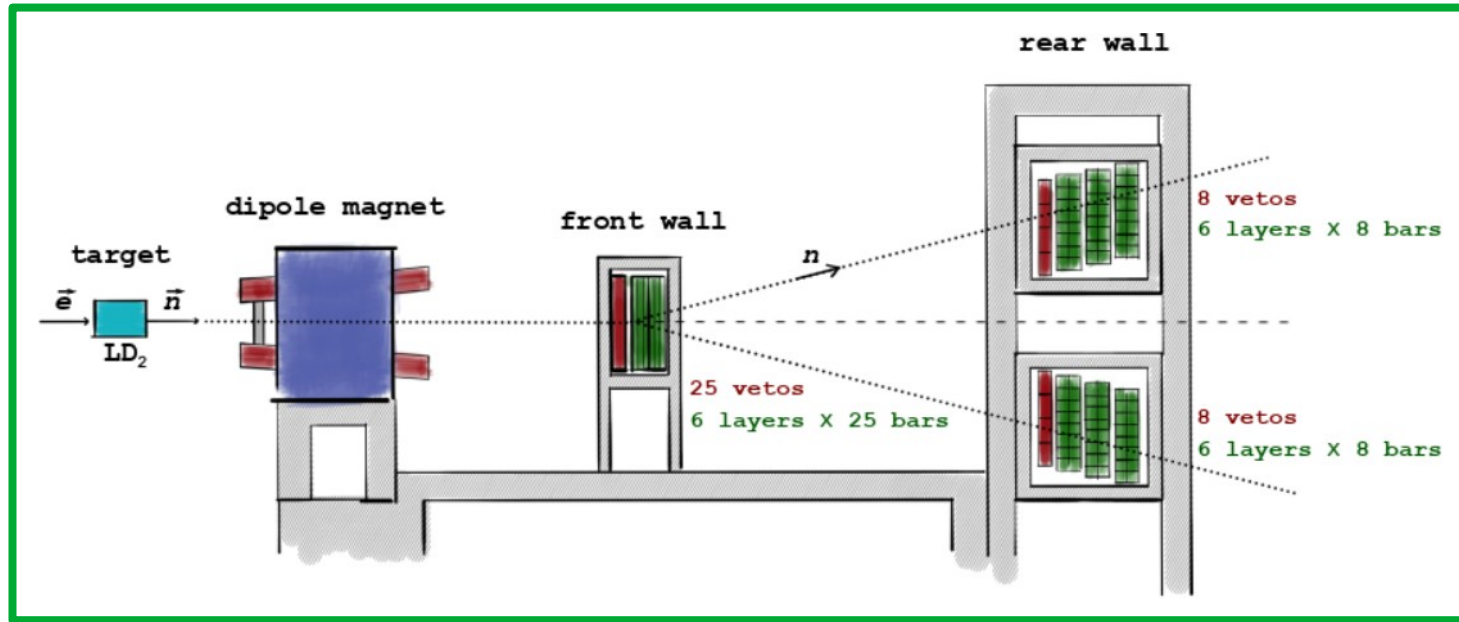
THE LOW-ENERGY FRONTIER
OF THE STANDARD MODEL

Discrepancy in the Consistency of Neutron Form Factor Measurements



- No free neutron target
- Large background & low statistics
- Inconsistent experimental setups for different momentum transfers Q^2

Development of a High Rate Neutron Polarimeter



- Located at the three-spectrometer apparatus at MAMI covering a wide range of momentum transfers Q^2
- Cope with several Mcps of background while providing precise timing & high segmentation
- Time-over-Threshold & FPGA-based high precision TDCs

Preliminary Results of the 1st Pilot Experiment at $Q^2=0.6 \text{ GeV}^2$

Does particle identification using time-over-threshold work?

