



Measurement of the Analysing Power in Proton-Proton Elastic Scattering at Small Angles



JÜLICH
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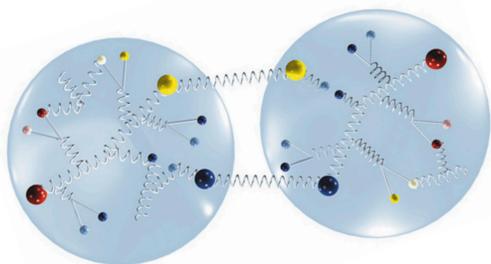
Advisors: Hans Ströher (University of Cologne and FZJ), Nodar Lomidze (TSU)

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Motivation

Describe Strong Interaction

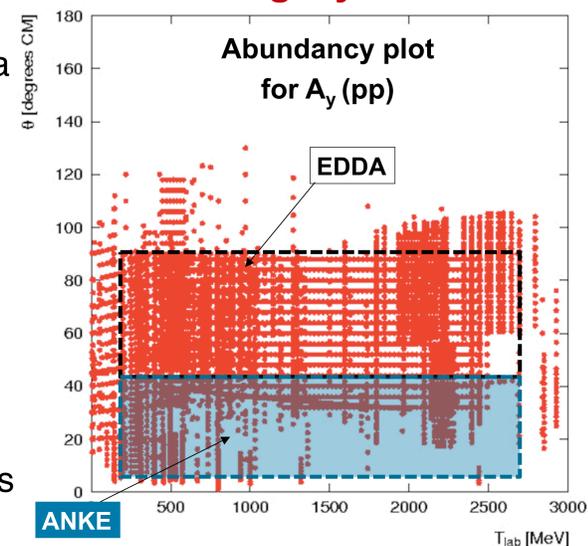
Want to understand how two nucleons (N: p,n) interact



Need more experimental information!

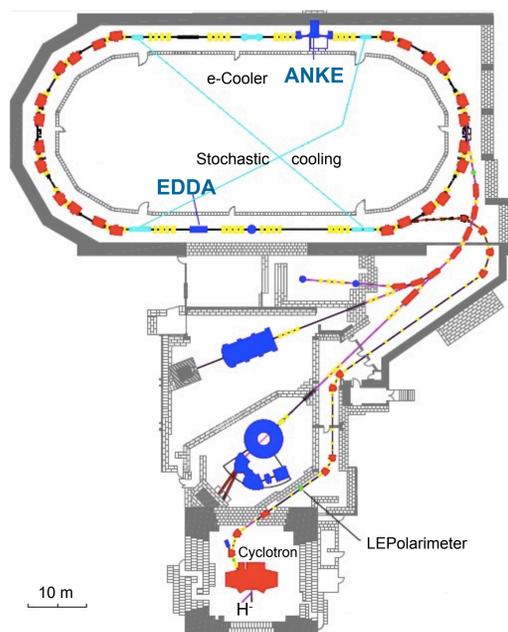
Improve NN Data Base — from EDDA's legacy to ANKE

- Wealth of pp elastic scattering data (e.g. from EDDA detector)
- Scarce experimental data at small angles above $T_p = 1.0$ GeV
- **ANKE detector can contribute!**
- Now: single polarized experiment: pp analyzing power (A_y)
- Next: double polarized experiments spin correlation coefficients



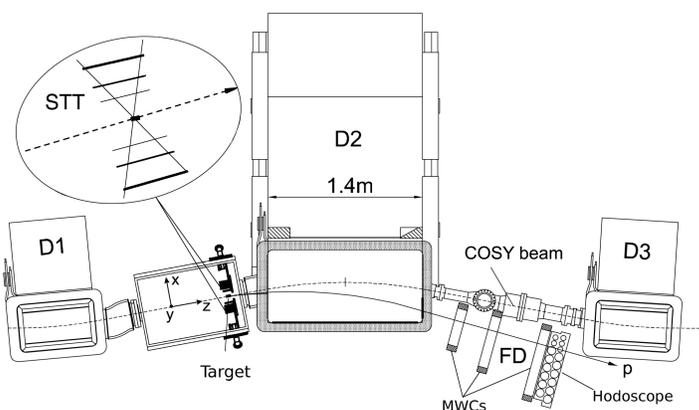
Proton-Proton Experiment at COSY

Accelerator: COSY



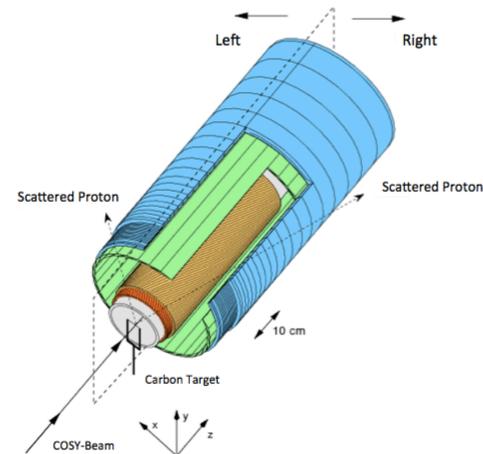
- Polarized proton beam
- Internal targets

Detector: ANKE



- Hydrogen cluster target
 - Forward Detector (FD)
 - Silicon Tracking Telescopes (STT)
- pp elastic scattering asymmetry

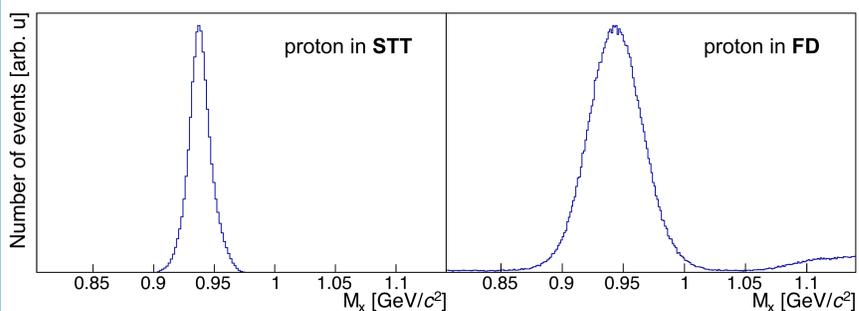
Beam polarimeter: EDDA



- Φ -symmetric scintillator rings
- Count-rate asymmetry
- Polarimetry reaction: $pC \rightarrow pX$

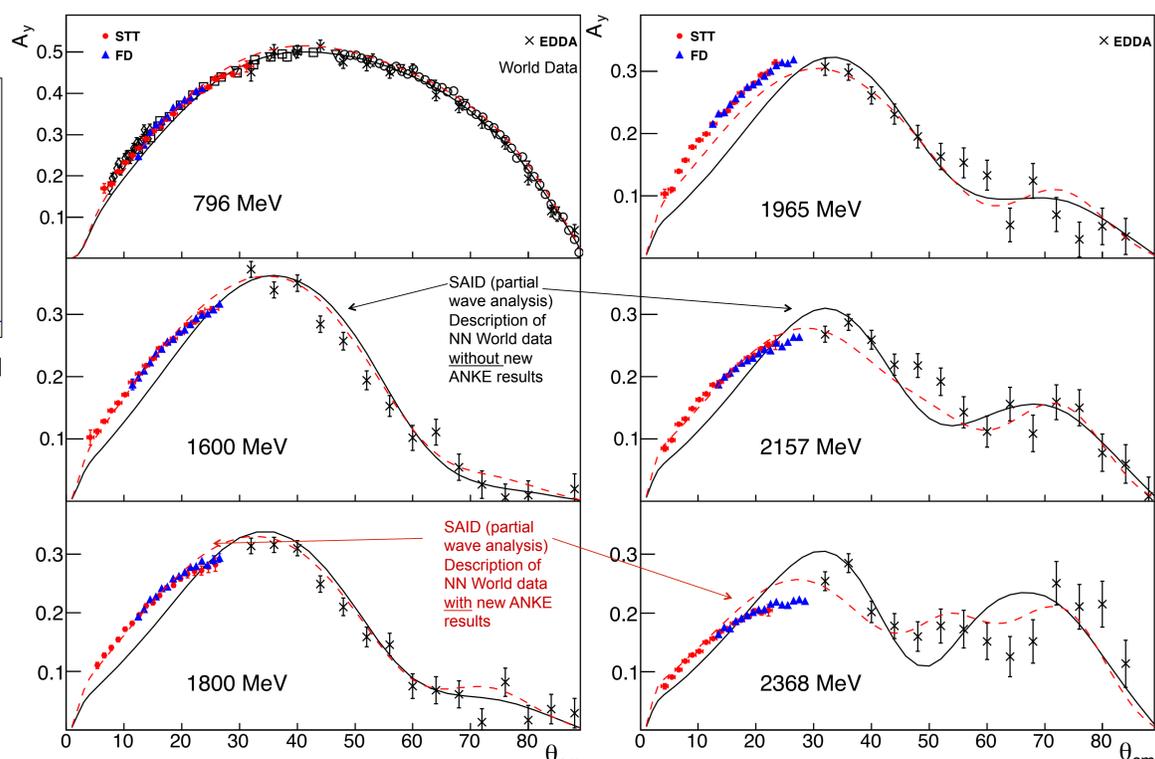
Results*

- Reaction identification: missing mass $pp \rightarrow pX$



- Clean proton peaks

- Precision ANKE data in the forward region
- Consistency between FD and STT data
- Agreement with the existing experimental data
- Significant change in quantitative description (old: black line; new: red line)



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