

Turkey at CERN Early Collaborations



NA47- SPIN MUON COLLABORATION (SMC)

Participating Groups:  Bogazici University^a

^aEngin Arik (group leader), Erhan Gülmez, Gökhan Ünel, Tülay Cuhadar, Cenap Özben (Istanbul Technical University), Iskender Reyhancan (Istanbul Technical University).

We contributed significantly to the Polarized Target Operations of the SMC. SMC measured the spin distribution within the nucleons (proton, neutron) to understand where the nucleon spin comes from.

SMC Polarized Target was the largest polarized deuterium target in the world. About 2 liters of liquid deuterium was polarized by the dynamic nuclear polarization at about 1K in a 2.5 T superconducting magnet. Polarization was kept at the maximum value by freezing the target further down to 0.1K with a dilution refrigerator.

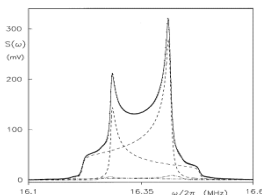
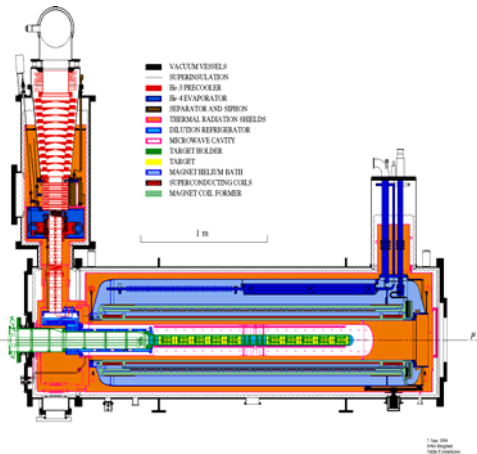


Figure on the left displays the NMR signal for deuterated butanol polarized to 44%.



SMC Polarized Target System

WA79 CHARMII COLLABORATION

Participating Groups:  Bogazici University^a  METU^b

^aBogazici University: Engin Arik (group leader), Baki Akkus (Istanbul University) ^bMETU (Middle East Technical University): Perihan Tolun (group leader), Ramazan Sever, Meltem Serin-Zeyrek

We participated in data taking and analysis in CHARMII experiment. CHARMII experiment studied the neutrino-electron scattering at the SPS. The results enhanced our knowledge of weak force in general and the interaction of muon-neutrinos with the electrons.