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CologneAMS lab report: Routine operation and some recent developments

The first part of this talk gives an overview of the AMS system at the 6 MV accelerator of CologneAMS and discusses the performance of routine measurements for Be, C, Al, Cl, Ca and Pu. We focus on the suppression of the isobars B, S and K which are present in the case of Be, Cl and Ca and show corresponding spectra.

The second part of the talk discusses some special developments. We show a method for measuring ultra tiny radiocarbon samples. By using a spike it is possible to measure a 1 mug carbon sample with an uncertainty not bigger than the statistical limit. Another special development is taking place at the 10 MV accelerator of Cologne. We explain the AMS beam line which is suitable for the measurement of medium mass isotopes like Mn and Fe. One application for Fe is the search for supernovae near the solar system. This is very challenging since extremely small isotopic ratios have to be measured and one has to deal with the isobar Ni. We show our recent investigation of beam formation in a gas filled magnet for isobar suppression.

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