FAZIA Collaboration Status, Perspectives for Installation and Possible Physics Case in Poland

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Abstract. The aim of the FAZIA project is the design and construction of a charged particle detector with high resolution and low thresholds, which should be used both with stable beams and radioactive beams in the range $10 - 100$ MeV/nucleon. Several European institutions are involved in the project and the RD phase (concerning detectors, electronics and identification techniques) started in 2006. Techniques for charge and mass identification of reaction products were obtained by means of a systematic study of the basic detection module. Significant improvements in ΔE-E and pulse-shape techniques were obtained by various methods. The good identification quality obtained with the prototypes during the RD phase, allowed us to investigate also some aspects of isospin physics such as isospin transport phenomena. After the conclusion of the RD period, the FAZIA Collaboration entered the demonstrator phase. All the previous work demonstrates the very good capabilities of FAZIA in terms of charge and mass identification with low thresholds. FAZIA is designed in such a way to be easily movable and coupled to other apparatuses in order to permit a very rich scientific program exploiting various stable and radioactive beam facilities.