



Radiation measurement on the balloon facility BEXUS

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The Earth is permanently exposed to energetic particles. Among them galactic cosmic rays interact with the atoms of the atmosphere, producing a natural radiation field, also consisting of secondary particles. This complex field is composed of charged particles consisting mainly of protons, electrons, muons, alpha-particles, as well as neutral particles consisting of neutrons and gamma-rays. The radiation exposure is dependent on the altitude and the geomagnetic latitude. The latter is caused by the modulation due to the Earth's magnetic field. The scientific goal of the instrument is to measure the dose rate as a function of altitude between ground level and 35km height during solar minimum and at high geomagnetic latitude. Especially we will be able to investigate the dose rate distribution around the Pfotzer maximum. For this investigation a particle telescope consisting of four segmented silicon semiconductor detectors was developed. Due to the telescope design, it is possible to separate between neutral and charged particles. The instrument design as well as first measurements on ground will be presented.