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### **Statistical limits on isotropic CR distributions with a space detector**

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The study of the cosmic ray (CR) isotropy can provide additional information to the other observables in CR research. Lack of isotropy can result crucial in probing the propagation mechanism in the heliosphere and in the galaxy. For this purpose, a space based large spectrometer can measure an unprecedented amount of particles arriving from a wider fraction of the sky. Thus we simulated a detector taking data on board of the International Space Station. We considered the peculiar conditions of operation, such as low Earth orbits and not uniform exposure over the observed sky. Moreover, applying a back-tracing code implementing the Tsyganenko 2005 external field model, we reconstructed particle trajectories inside the Earth magnetosphere. Thus, we were able to recover the CR arrival directions at the magnetosphere border during both quiet and active solar periods. Using a shuffling technique, we investigated the resulting statistical limits in the determination of a simulated isotropic sky.