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Cosmic rays at ground level; a brief introduction

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Galactic cosmic rays, and sporadic high energy solar energetic particles, are energetic enough to pierce the Earth's protective magnetosphere and interact with the atmosphere. Here, a secondary particle cascade leads to enhanced radiation levels which is of importance, for instance, to aviation dosimetry and related studies. At ground level, these secondary particles can be observed (indirectly) by means of neutron monitors, and this has been done for more than 70 years, providing a valuable long-term cosmic ray record. In this talk, we introduce the different primary particle populations, discuss their acceleration and modulation, and connect this with long-term neutron monitor measurements.