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## **Ion production in the atmosphere by incident electrons and protons**

### **Abstract content**

Atmospheric ionisation rate for the incident electrons and protons was simulated using GEANT4 code. The photon-nuclei cascade generated by primary particle is included in this code. Secondary bremsstrahlung effect from electrons causes peak ionisation at low altitudes in addition to the more powerful peak at high altitudes. We discuss the contribution of helium to the total ionisation rate which is around 10 % of that caused by protons. We compare our results with those known from literature.

**If this papers is presented for a collaboration, please specify the collaboration**

### **Summary**

### **Reference**

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