

Abstract Submitted  
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**Thermalization of High Energy Electrons in Nitrogen** VLADIMIR STOJANOVIC, ZELJKA NIKITOVIC, ZORAN PETROVIC, Institute of Physics — Electron thermalization in pure nitrogen and in air (N<sub>2</sub>/O<sub>2</sub>) is studied by Monte Carlo technique for electron energies from 20 eV up to 10 keV. Spatially resolved emission is accounted for by counting number of specific emissions at pressures 1 Torr and 760 Torr. Relaxation of electron energy is followed by using a set of data for nitrogen and oxygen including elastic and inelastic collisions and realistic energy partitioning in ionizing collisions. The secondary electrons born in ionization events are found to affect significantly emission of the 2<sup>+</sup> band. The energy dependences of the effective collision (and emission) probabilities for 391.4 nm and 337.1 nm emission lines and ionization are calculated. These data are used in attempts to use atmospheric fluorescence due to cosmic rays to detect very high energy elementary particles.

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