Electronic ion energy loss calculations on the basis of the binary encounter approximation

Ordonez, C. A.

Bickel, D. R.

Venezia, V. C.

McDaniel, F. D.

Malteson, S. E.

Molina, M. I.

Electronic ion energy loss calculations on the basis of the binary encounter approximation are presented for protons in oxygen, nitrogen and silicon. Calculations using both an analytical approach as well as a Monte Carlo approach are found to agree well with experimental data even down to energies below the stopping cross section maximum. Energy loss calculations for protons in silicon under channeling conditions are included and predictions are made for channeling in the ?110? direction at low energies (5-500 keV).