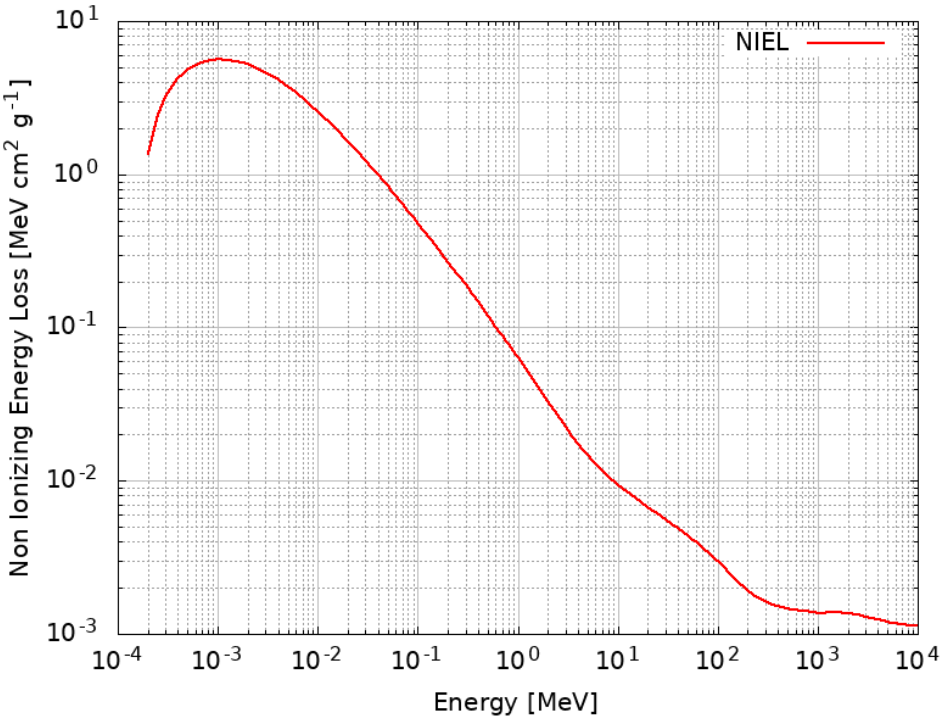
SR (screened relativistic) NIEL (non ionizing energy loss) Calculator

Ions&Protons: SR-NIEL – 7 ver. 11.0 - 15.September.2025

Input Parameters
^{1}H in Si
Displacement Threshold Energies [eV]: 21.00;
Minimum Energy [MeV]: 1.0e-04
Maximum Energy [MeV]: 1.0e+04
IonModel Selected : Hadron+Coulomb
IonModel Available : Hadronic Contribution Available
Hadronic Contribution : No Scaling
Particle Fluence [cm^{-2}]: 1.00e+00



Energy (MeV)	NIEL (MeV cm^2 g^{-1})	NIEL Dose* (MeV g^{-1})	NIEL Dose* (Gy)
1.0000e-04	0.0000e+00	0.0000e+00	0.0000e+00
1.5000e-04	0.0000e+00	0.0000e+00	0.0000e+00
2.0000e-04	1.3628e+00	1.3628e+00	2.1840e-10
2.5000e-04	2.4531e+00	2.4531e+00	3.9313e-10
3.0000e-04	3.2238e+00	3.2238e+00	5.1663e-10
3.5000e-04	3.7902e+00	3.7902e+00	6.0740e-10
4.0000e-04	4.2175e+00	4.2175e+00	6.7587e-10
4.5000e-04	4.5457e+00	4.5457e+00	7.2847e-10
5.0000e-04	4.8009e+00	4.8009e+00	7.6937e-10
5.5000e-04	5.0008e+00	5.0008e+00	8.0142e-10
6.0000e-04	5.1581e+00	5.1581e+00	8.2662e-10
6.5000e-04	5.2819e+00	5.2819e+00	8.4646e-10
7.0000e-04	5.3789e+00	5.3789e+00	8.6201e-10
7.5000e-04	5.4544e+00	5.4544e+00	8.7410e-10
8.0000e-04	5.5123e+00	5.5123e+00	8.8338e-10
8.5000e-04	5.5558e+00	5.5558e+00	8.9035e-10
9.0000e-04	5.5873e+00	5.5873e+00	8.9540e-10
9.5000e-04	5.6089e+00	5.6089e+00	8.9886e-10
1.0000e-03	5.6222e+00	5.6222e+00	9.0099e-10
1.5000e-03	5.5041e+00	5.5041e+00	8.8206e-10
2.0000e-03	5.2215e+00	5.2215e+00	8.3678e-10
2.5000e-03	4.9204e+00	4.9204e+00	7.8852e-10
3.0000e-03	4.6368e+00	4.6368e+00	7.4308e-10
3.5000e-03	4.3791e+00	4.3791e+00	7.0178e-10
4.0000e-03	4.1474e+00	4.1474e+00	6.6465e-10
4.5000e-03	3.9394e+00	3.9394e+00	6.3132e-10
5.0000e-03	3.7523e+00	3.7523e+00	6.0133e-10
5.5000e-03	3.5833e+00	3.5833e+00	5.7425e-10
6.0000e-03	3.4302e+00	3.4302e+00	5.4970e-10
6.5000e-03	3.2907e+00	3.2907e+00	5.2735e-10
7.0000e-03	3.1632e+00	3.1632e+00	5.0692e-10
7.5000e-03	3.0462e+00	3.0462e+00	4.8817e-10
8.0000e-03	2.9384e+00	2.9384e+00	4.7089e-10
8.5000e-03	2.8387e+00	2.8387e+00	4.5492e-10
9.0000e-03	2.7463e+00	2.7463e+00	4.4012e-10
9.5000e-03	2.6604e+00	2.6604e+00	4.2634e-10
1.0000e-02	2.5802e+00	2.5802e+00	4.1350e-10
1.5000e-02	1.9985e+00	1.9985e+00	3.2027e-10
2.0000e-02	1.6454e+00	1.6454e+00	2.6368e-10
2.5000e-02	1.4059e+00	1.4059e+00	2.2530e-10
3.0000e-02	1.2316e+00	1.2316e+00	1.9738e-10
3.5000e-02	1.0986e+00	1.0986e+00	1.7605e-10
4.0000e-02	9.9329e-01	9.9329e-01	1.5918e-10
4.5000e-02	9.0772e-01	9.0772e-01	1.4547e-10
5.0000e-02	8.3666e-01	8.3666e-01	1.3408e-10
5.5000e-02	7.7663e-01	7.7663e-01	1.2446e-10
6.0000e-02	7.2517e-01	7.2517e-01	1.1621e-10
6.5000e-02	6.8053e-01	6.8053e-01	1.0906e-10

7.0000e-02	6.4141e-01	6.4141e-01	1.0279e-10
7.5000e-02	6.0681e-01	6.0681e-01	9.7245e-11
8.0000e-02	5.7598e-01	5.7598e-01	9.2304e-11
8.5000e-02	5.4832e-01	5.4832e-01	8.7871e-11
9.0000e-02	5.2334e-01	5.2334e-01	8.3869e-11
9.5000e-02	5.0068e-01	5.0068e-01	8.0237e-11
1.0000e-01	4.7980e-01	4.7980e-01	7.6891e-11
1.5000e-01	3.4128e-01	3.4128e-01	5.4692e-11
2.0000e-01	2.6800e-01	2.6800e-01	4.2949e-11
2.5000e-01	2.2218e-01	2.2218e-01	3.5606e-11
3.0000e-01	1.9036e-01	1.9036e-01	3.0506e-11
3.5000e-01	1.6573e-01	1.6573e-01	2.6560e-11
4.0000e-01	1.4692e-01	1.4692e-01	2.3544e-11
4.5000e-01	1.3205e-01	1.3205e-01	2.1161e-11
5.0000e-01	1.1999e-01	1.1999e-01	1.9229e-11
5.5000e-01	1.1000e-01	1.1000e-01	1.7629e-11
6.0000e-01	1.0159e-01	1.0159e-01	1.6281e-11
6.5000e-01	9.4410e-02	9.4410e-02	1.5130e-11
7.0000e-01	8.8200e-02	8.8200e-02	1.4135e-11
7.5000e-01	8.2775e-02	8.2775e-02	1.3265e-11
8.0000e-01	7.7994e-02	7.7994e-02	1.2499e-11
8.5000e-01	7.3748e-02	7.3748e-02	1.1819e-11
9.0000e-01	6.9951e-02	6.9951e-02	1.1210e-11
9.5000e-01	6.6533e-02	6.6533e-02	1.0662e-11
1.0000e+00	6.3442e-02	6.3442e-02	1.0167e-11
1.5000e+00	4.3453e-02	4.3453e-02	6.9637e-12
2.0000e+00	3.3142e-02	3.3142e-02	5.3112e-12
2.5000e+00	2.6827e-02	2.6827e-02	4.2993e-12
3.0000e+00	2.2565e-02	2.2565e-02	3.6161e-12
3.5000e+00	1.9580e-02	1.9580e-02	3.1379e-12
4.0000e+00	1.7491e-02	1.7491e-02	2.8030e-12
4.5000e+00	1.5958e-02	1.5958e-02	2.5574e-12
5.0000e+00	1.4754e-02	1.4754e-02	2.3645e-12
5.5000e+00	1.3767e-02	1.3767e-02	2.2062e-12
6.0000e+00	1.2939e-02	1.2939e-02	2.0736e-12
6.5000e+00	1.2239e-02	1.2239e-02	1.9613e-12
7.0000e+00	1.1642e-02	1.1642e-02	1.8657e-12
7.5000e+00	1.1130e-02	1.1130e-02	1.7836e-12
8.0000e+00	1.0687e-02	1.0687e-02	1.7127e-12
8.5000e+00	1.0303e-02	1.0303e-02	1.6511e-12
9.0000e+00	9.9662e-03	9.9662e-03	1.5971e-12
9.5000e+00	9.6687e-03	9.6687e-03	1.5495e-12
1.0000e+01	9.4037e-03	9.4037e-03	1.5070e-12
1.5000e+01	7.7203e-03	7.7203e-03	1.2372e-12
2.0000e+01	6.7586e-03	6.7586e-03	1.0831e-12
2.5000e+01	6.0892e-03	6.0892e-03	9.7583e-13
3.0000e+01	5.5935e-03	5.5935e-03	8.9639e-13
3.5000e+01	5.2095e-03	5.2095e-03	8.3485e-13
4.0000e+01	4.8988e-03	4.8988e-03	7.8506e-13
4.5000e+01	4.6373e-03	4.6373e-03	7.4316e-13
5.0000e+01	4.4102e-03	4.4102e-03	7.0676e-13
5.5000e+01	4.2079e-03	4.2079e-03	6.7434e-13
6.0000e+01	4.0246e-03	4.0246e-03	6.4497e-13
6.5000e+01	3.8567e-03	3.8567e-03	6.1806e-13
7.0000e+01	3.7017e-03	3.7017e-03	5.9322e-13
7.5000e+01	3.5579e-03	3.5579e-03	5.7018e-13
8.0000e+01	3.4243e-03	3.4243e-03	5.4877e-13

8.5000e+01	3.2999e-03	3.2999e-03	5.2884e-13
9.0000e+01	3.1841e-03	3.1841e-03	5.1027e-13
9.5000e+01	3.0762e-03	3.0762e-03	4.9298e-13
1.0000e+02	2.9757e-03	2.9757e-03	4.7687e-13
1.5000e+02	2.2803e-03	2.2803e-03	3.6543e-13
2.0000e+02	1.9291e-03	1.9291e-03	3.0915e-13
2.5000e+02	1.7408e-03	1.7408e-03	2.7897e-13
3.0000e+02	1.6326e-03	1.6326e-03	2.6163e-13
3.5000e+02	1.5658e-03	1.5658e-03	2.5094e-13
4.0000e+02	1.5217e-03	1.5217e-03	2.4386e-13
4.5000e+02	1.4906e-03	1.4906e-03	2.3888e-13
5.0000e+02	1.4677e-03	1.4677e-03	2.3521e-13
5.5000e+02	1.4505e-03	1.4505e-03	2.3245e-13
6.0000e+02	1.4375e-03	1.4375e-03	2.3036e-13
6.5000e+02	1.4277e-03	1.4277e-03	2.2880e-13
7.0000e+02	1.4203e-03	1.4203e-03	2.2761e-13
7.5000e+02	1.4142e-03	1.4142e-03	2.2664e-13
8.0000e+02	1.4085e-03	1.4085e-03	2.2572e-13
8.5000e+02	1.4017e-03	1.4017e-03	2.2464e-13
9.0000e+02	1.3926e-03	1.3926e-03	2.2317e-13
9.5000e+02	1.3794e-03	1.3794e-03	2.2106e-13
1.0000e+03	1.3607e-03	1.3607e-03	2.1805e-13
1.5000e+03	1.3923e-03	1.3923e-03	2.2313e-13
2.0000e+03	1.3677e-03	1.3677e-03	2.1918e-13
2.5000e+03	1.3312e-03	1.3312e-03	2.1333e-13
3.0000e+03	1.2954e-03	1.2954e-03	2.0760e-13
3.5000e+03	1.2640e-03	1.2640e-03	2.0257e-13
4.0000e+03	1.2375e-03	1.2375e-03	1.9832e-13
4.5000e+03	1.2157e-03	1.2157e-03	1.9483e-13
5.0000e+03	1.1979e-03	1.1979e-03	1.9197e-13
5.5000e+03	1.1835e-03	1.1835e-03	1.8966e-13
6.0000e+03	1.1719e-03	1.1719e-03	1.8781e-13
6.5000e+03	1.1627e-03	1.1627e-03	1.8632e-13
7.0000e+03	1.1554e-03	1.1554e-03	1.8515e-13
7.5000e+03	1.1496e-03	1.1496e-03	1.8424e-13
8.0000e+03	1.1452e-03	1.1452e-03	1.8353e-13
8.5000e+03	1.1419e-03	1.1419e-03	1.8299e-13
9.0000e+03	1.1394e-03	1.1394e-03	1.8260e-13
9.5000e+03	1.1376e-03	1.1376e-03	1.8231e-13
1.0000e+04	1.1364e-03	1.1364e-03	1.8212e-13

* The mediun has to to be thick enough to fully absorb the kinetic energy of recoil nuclei.