SR (screened relativistic) NIEL (non ionizing energy loss) Calculator
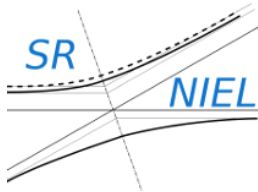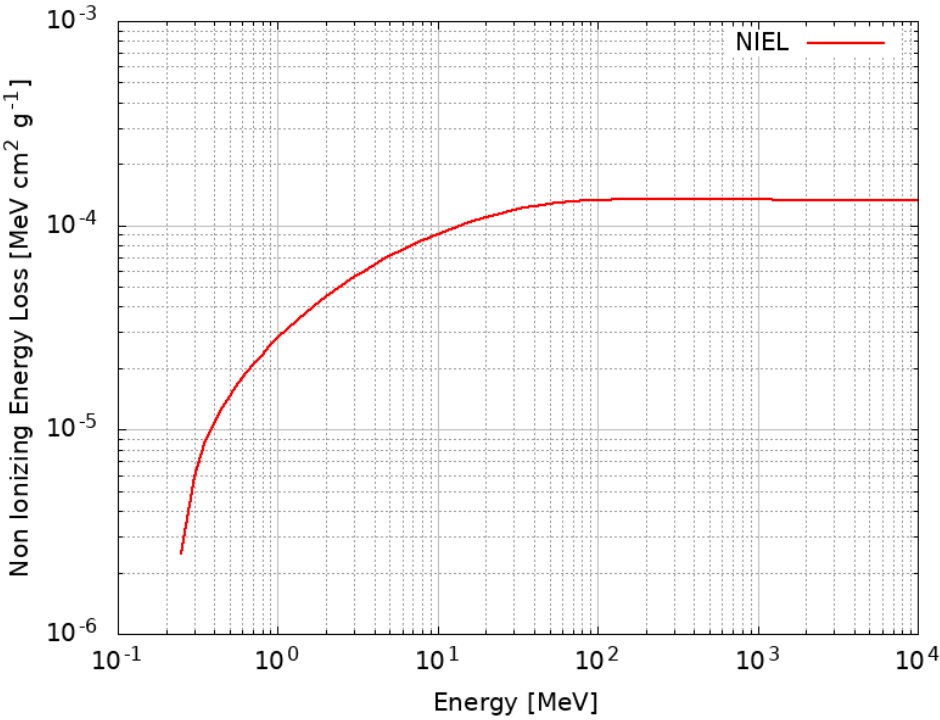
Electrons: SR-NIEL – 7 ver. 11.0 - 15.September.2025

Input Parameters
Electrons in Si
Displacement Threshold Energies [eV]: 21.00;
Minimum Energy [MeV]: 1.0e-01
Maximum Energy [MeV]: 1.0e+04
Form Factor Model : Exponential
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-01	0.0000e+00	0.0000e+00	0.0000e+00
1.5000e-01	0.0000e+00	0.0000e+00	0.0000e+00
2.0000e-01	0.0000e+00	0.0000e+00	0.0000e+00
2.5000e-01	2.4793e-06	2.4793e-06	3.9732e-16
3.0000e-01	5.8524e-06	5.8524e-06	9.3788e-16
3.5000e-01	8.5425e-06	8.5425e-06	1.3690e-15
4.0000e-01	1.0822e-05	1.0822e-05	1.7343e-15
4.5000e-01	1.2831e-05	1.2831e-05	2.0562e-15
5.0000e-01	1.4649e-05	1.4649e-05	2.3476e-15
5.5000e-01	1.6323e-05	1.6323e-05	2.6159e-15
6.0000e-01	1.7886e-05	1.7886e-05	2.8664e-15
6.5000e-01	1.9358e-05	1.9358e-05	3.1022e-15
7.0000e-01	2.0753e-05	2.0753e-05	3.3257e-15
7.5000e-01	2.2082e-05	2.2082e-05	3.5388e-15
8.0000e-01	2.3354e-05	2.3354e-05	3.7426e-15
8.5000e-01	2.4575e-05	2.4575e-05	3.9383e-15
9.0000e-01	2.5749e-05	2.5749e-05	4.1265e-15
9.5000e-01	2.6882e-05	2.6882e-05	4.3081e-15
1.0000e+00	2.7977e-05	2.7977e-05	4.4835e-15
1.5000e+00	3.7308e-05	3.7308e-05	5.9788e-15
2.0000e+00	4.4611e-05	4.4611e-05	7.1492e-15
2.5000e+00	5.0604e-05	5.0604e-05	8.1096e-15
3.0000e+00	5.5671e-05	5.5671e-05	8.9217e-15
3.5000e+00	6.0050e-05	6.0050e-05	9.6234e-15
4.0000e+00	6.3896e-05	6.3896e-05	1.0240e-14
4.5000e+00	6.7319e-05	6.7319e-05	1.0788e-14
5.0000e+00	7.0398e-05	7.0398e-05	1.1282e-14
5.5000e+00	7.3192e-05	7.3192e-05	1.1729e-14
6.0000e+00	7.5745e-05	7.5745e-05	1.2139e-14
6.5000e+00	7.8093e-05	7.8093e-05	1.2515e-14
7.0000e+00	8.0264e-05	8.0264e-05	1.2863e-14
7.5000e+00	8.2280e-05	8.2280e-05	1.3186e-14
8.0000e+00	8.4161e-05	8.4161e-05	1.3487e-14
8.5000e+00	8.5922e-05	8.5922e-05	1.3770e-14
9.0000e+00	8.7576e-05	8.7576e-05	1.4035e-14
9.5000e+00	8.9134e-05	8.9134e-05	1.4284e-14
1.0000e+01	9.0605e-05	9.0605e-05	1.4520e-14
1.5000e+01	1.0190e-04	1.0190e-04	1.6330e-14
2.0000e+01	1.0939e-04	1.0939e-04	1.7530e-14
2.5000e+01	1.1475e-04	1.1475e-04	1.8390e-14
3.0000e+01	1.1876e-04	1.1876e-04	1.9032e-14
3.5000e+01	1.2183e-04	1.2183e-04	1.9525e-14
4.0000e+01	1.2423e-04	1.2423e-04	1.9909e-14
4.5000e+01	1.2613e-04	1.2613e-04	2.0213e-14
5.0000e+01	1.2764e-04	1.2764e-04	2.0456e-14
5.5000e+01	1.2886e-04	1.2886e-04	2.0651e-14
6.0000e+01	1.2984e-04	1.2984e-04	2.0808e-14
6.5000e+01	1.3064e-04	1.3064e-04	2.0936e-14

7.0000e+01	1.3129e-04	1.3129e-04	2.1040e-14
7.5000e+01	1.3182e-04	1.3182e-04	2.1126e-14
8.0000e+01	1.3226e-04	1.3226e-04	2.1196e-14
8.5000e+01	1.3263e-04	1.3263e-04	2.1254e-14
9.0000e+01	1.3293e-04	1.3293e-04	2.1302e-14
9.5000e+01	1.3317e-04	1.3317e-04	2.1342e-14
1.0000e+02	1.3338e-04	1.3338e-04	2.1375e-14
1.5000e+02	1.3427e-04	1.3427e-04	2.1517e-14
2.0000e+02	1.3440e-04	1.3440e-04	2.1538e-14
2.5000e+02	1.3437e-04	1.3437e-04	2.1534e-14
3.0000e+02	1.3431e-04	1.3431e-04	2.1523e-14
3.5000e+02	1.3424e-04	1.3424e-04	2.1513e-14
4.0000e+02	1.3418e-04	1.3418e-04	2.1503e-14
4.5000e+02	1.3412e-04	1.3412e-04	2.1494e-14
5.0000e+02	1.3407e-04	1.3407e-04	2.1486e-14
5.5000e+02	1.3403e-04	1.3403e-04	2.1479e-14
6.0000e+02	1.3399e-04	1.3399e-04	2.1473e-14
6.5000e+02	1.3396e-04	1.3396e-04	2.1468e-14
7.0000e+02	1.3393e-04	1.3393e-04	2.1463e-14
7.5000e+02	1.3390e-04	1.3390e-04	2.1459e-14
8.0000e+02	1.3388e-04	1.3388e-04	2.1455e-14
8.5000e+02	1.3386e-04	1.3386e-04	2.1452e-14
9.0000e+02	1.3384e-04	1.3384e-04	2.1448e-14
9.5000e+02	1.3382e-04	1.3382e-04	2.1446e-14
1.0000e+03	1.3380e-04	1.3380e-04	2.1443e-14
1.5000e+03	1.3370e-04	1.3370e-04	2.1426e-14
2.0000e+03	1.3364e-04	1.3364e-04	2.1417e-14
2.5000e+03	1.3361e-04	1.3361e-04	2.1411e-14
3.0000e+03	1.3358e-04	1.3358e-04	2.1408e-14
3.5000e+03	1.3357e-04	1.3357e-04	2.1405e-14
4.0000e+03	1.3355e-04	1.3355e-04	2.1403e-14
4.5000e+03	1.3354e-04	1.3354e-04	2.1401e-14
5.0000e+03	1.3353e-04	1.3353e-04	2.1400e-14
5.5000e+03	1.3353e-04	1.3353e-04	2.1399e-14
6.0000e+03	1.3352e-04	1.3352e-04	2.1398e-14
6.5000e+03	1.3352e-04	1.3352e-04	2.1397e-14
7.0000e+03	1.3351e-04	1.3351e-04	2.1396e-14
7.5000e+03	1.3351e-04	1.3351e-04	2.1396e-14
8.0000e+03	1.3351e-04	1.3351e-04	2.1395e-14
8.5000e+03	1.3350e-04	1.3350e-04	2.1395e-14
9.0000e+03	1.3350e-04	1.3350e-04	2.1394e-14
9.5000e+03	1.3350e-04	1.3350e-04	2.1394e-14
1.0000e+04	1.3350e-04	1.3350e-04	2.1394e-14

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