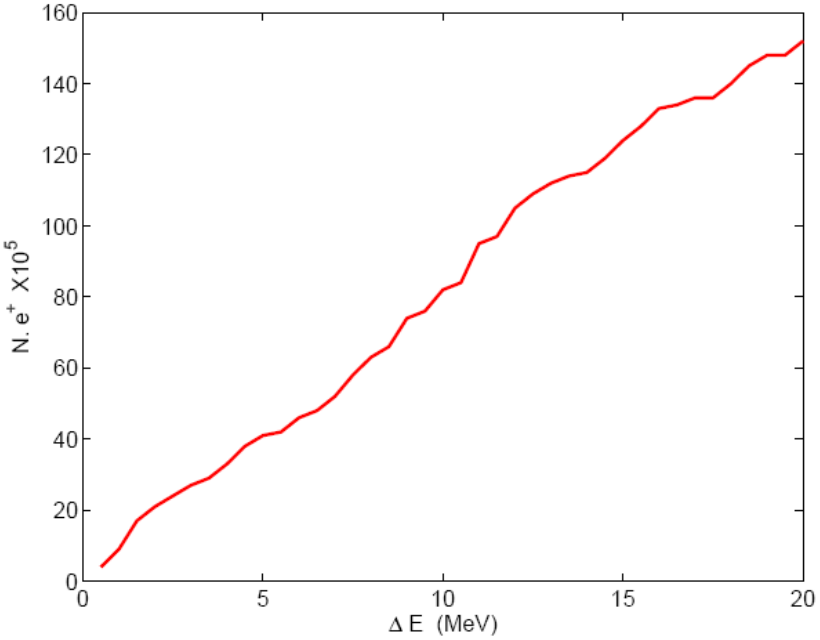
Capture Simulation Update

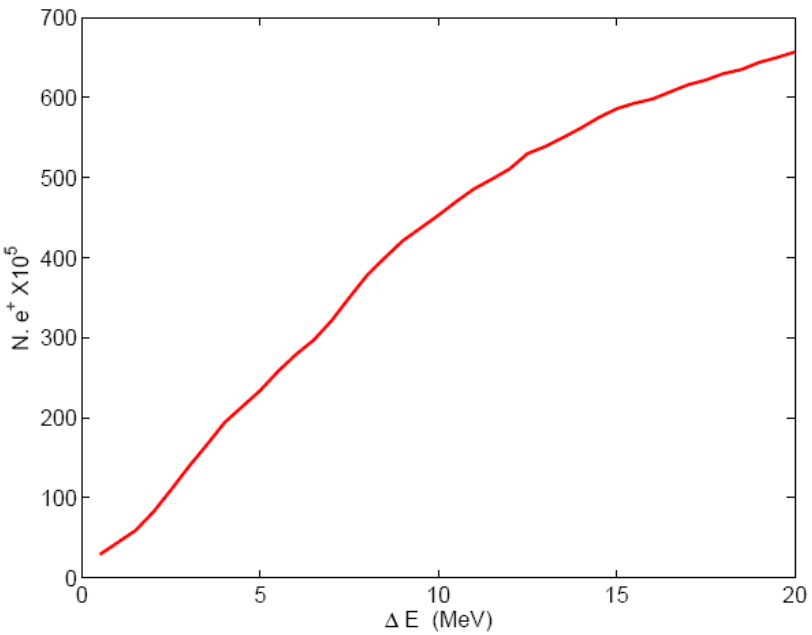
Alessandro Vivoli, Robert Chehab, Alessandro Variola

Type	N. e^+	ε_x π mm mrad	ε_y π mm mrad	ε_z π cm MeV	σ_z cm	σ_E MeV	σ_x cm	σ_y cm
1.8 / 5 182 MeV	6.85 10^7	20	15	2.66	0.53	5.16	0.48	0.39
1.8 / 5 4.996 GeV	6.24 10^7	1.16	0.96	30.96	0.49	63.75	0.74	0.70

Type	N. e^+	ε_x π mm mrad	ε_y π mm mrad	ε_z π cm MeV	σ_z cm	σ_E MeV	σ_x cm	σ_y cm
1.8 / 5 177 MeV	7.01 10^7	19	16	2.62	0.30	9.03	1.10	0.46
1.8 / 5 1.129 GeV	6.84 10^7	5.85	3.08	3.10 (8.63)	0. 30 (0.53)	10.36 (18.74)	0.83	0.77

Type	N. e^+	ε_x π mm mrad	ε_y π mm mrad	ε_z π cm MeV	σ_z cm	σ_E MeV	σ_x cm	σ_y cm
1.8 / 5 177 MeV	7.01 10^7	19	15	2.78	1.62 (0.22)	12.87	1.06	0.74





N. e^+ in 5000 ± 3 MeV : $2.7 \cdot 10^6$ (4.3 %)

N. e^+ in 5000 ± 6 MeV : $4.6 \cdot 10^6$ (7.4 %)

N. e^+ in 1129 ± 3 MeV : $1.39 \cdot 10^7$ (20 %)

N. e^+ in 1129 ± 6 MeV : $2.79 \cdot 10^7$ (41 %)

To reduce the energy spread

- Change of the phases in the accelerating cavities.
- Employment of a shorter beam at the beginning of the LINAC.
- Insertion of an energy compressor at 5 GeV.