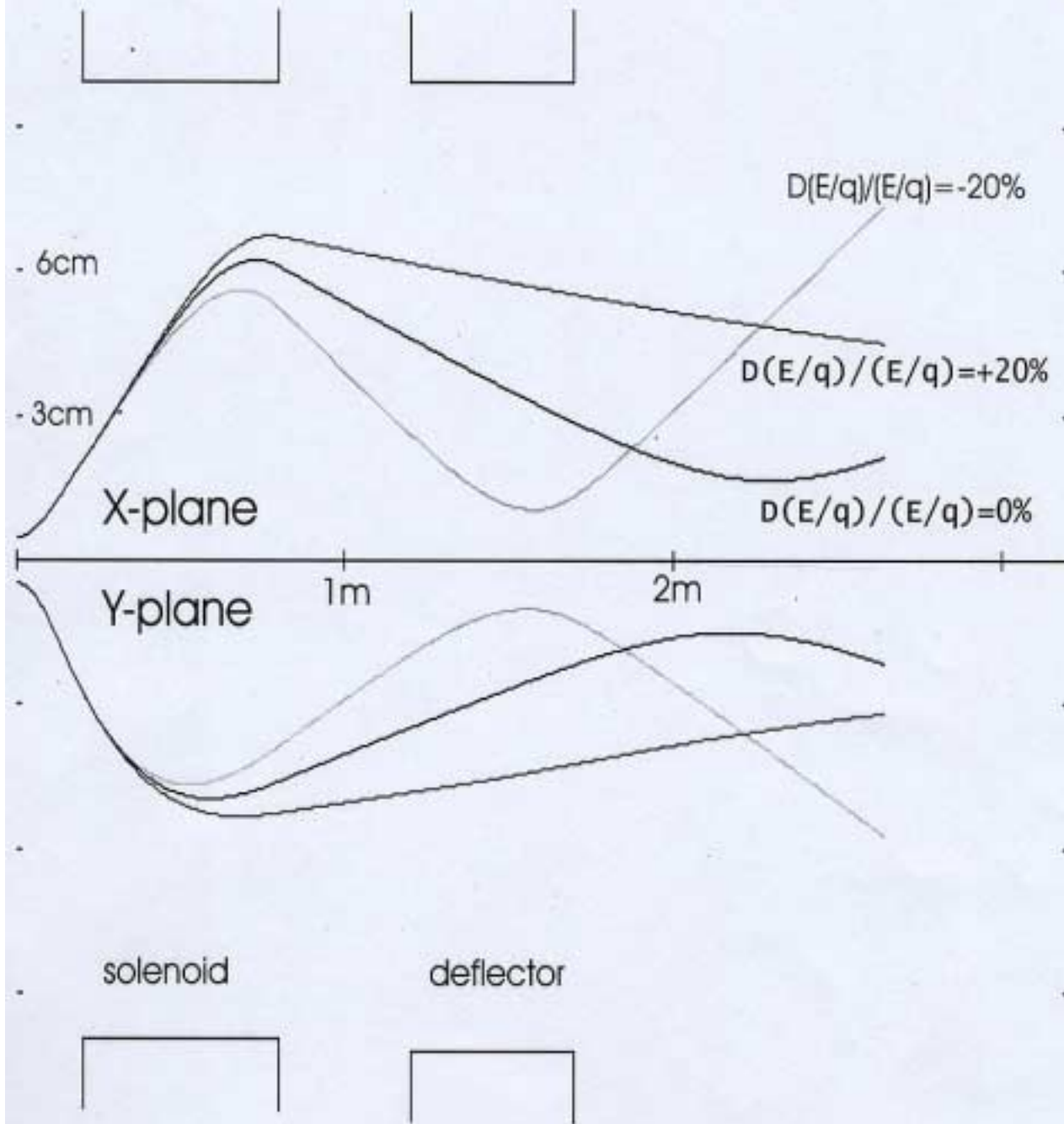


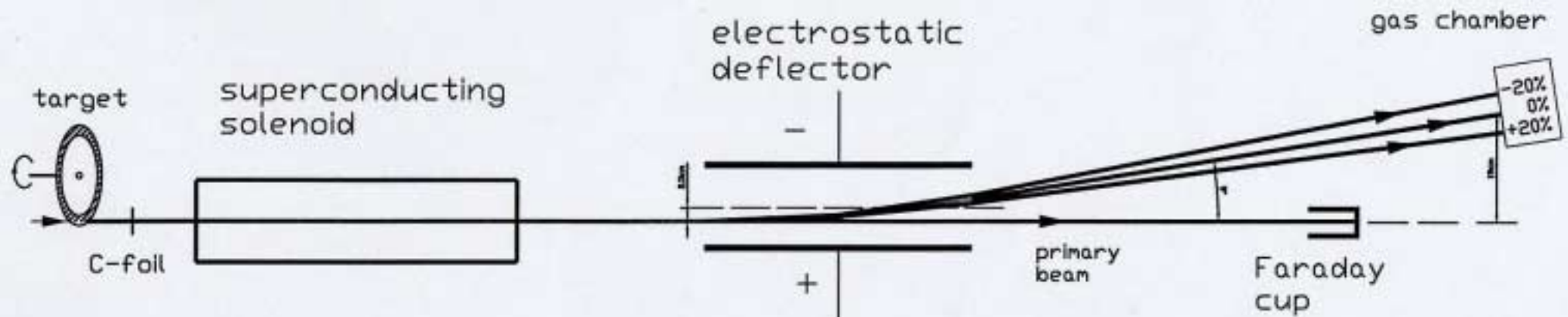
Electrostatic Preseparator for Chemistry of Superheavy Elements

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Dubna

Envelopes of beam for different electric rigidity recoils





Separator parameters

SOLID ANGLE	- 45MSR
ENERGY ACCEPTANCE	- $\pm 20\%$
BEND ANGLE	- 9°
TOTAL LENGTH	- 2.65M

Superconducting solenoid

EFFECTIVE LENGTH	- 0.6M
MAXIMUM MAGNETIC FIELD	- 5 TL
WARM BORN	- 0.15M

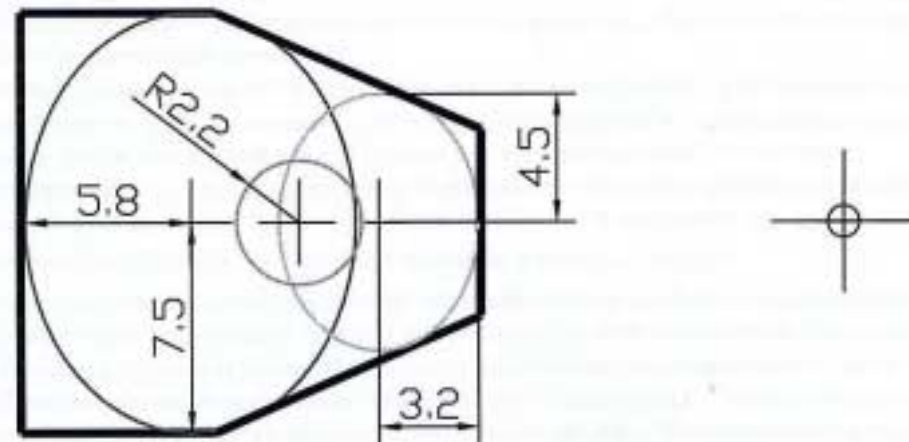
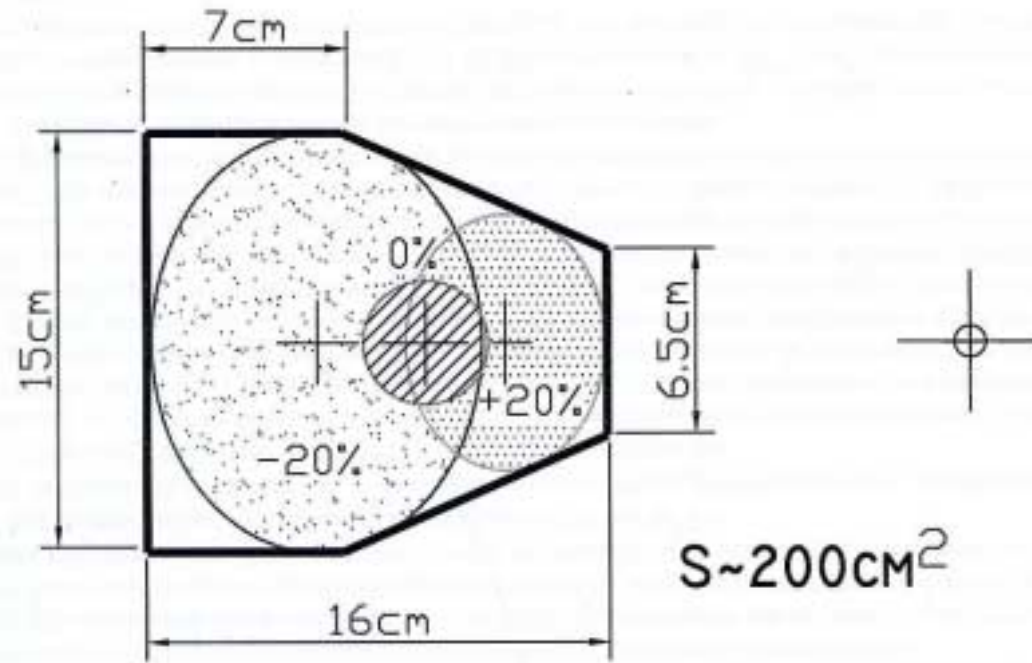
Distance

TARGET-SOLENOID	- 0.2M
SOLENOID-DEFLECTOR	- 0.4M
DEFLECTOR-GAS CHAMBER	- 0.95M

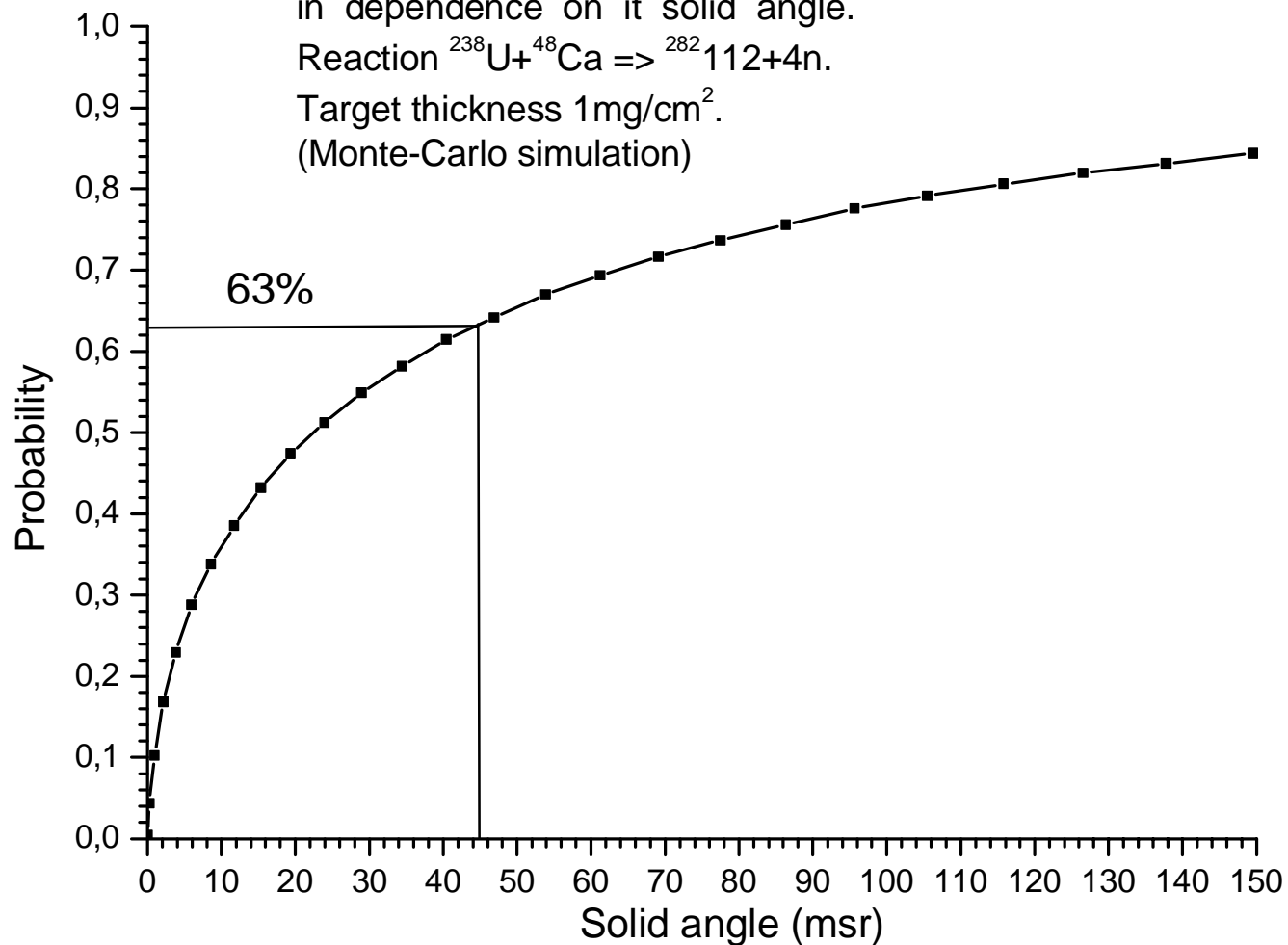
Electrostatic deflector

EFFECTIVE LENGTH	- 0.5M
MAXIMUM ELECTRIC FIELD	- $\pm 150\text{KV}$
GAP	- 0.15M

GEOMETRY OF GAS CHAMBER WINDOW

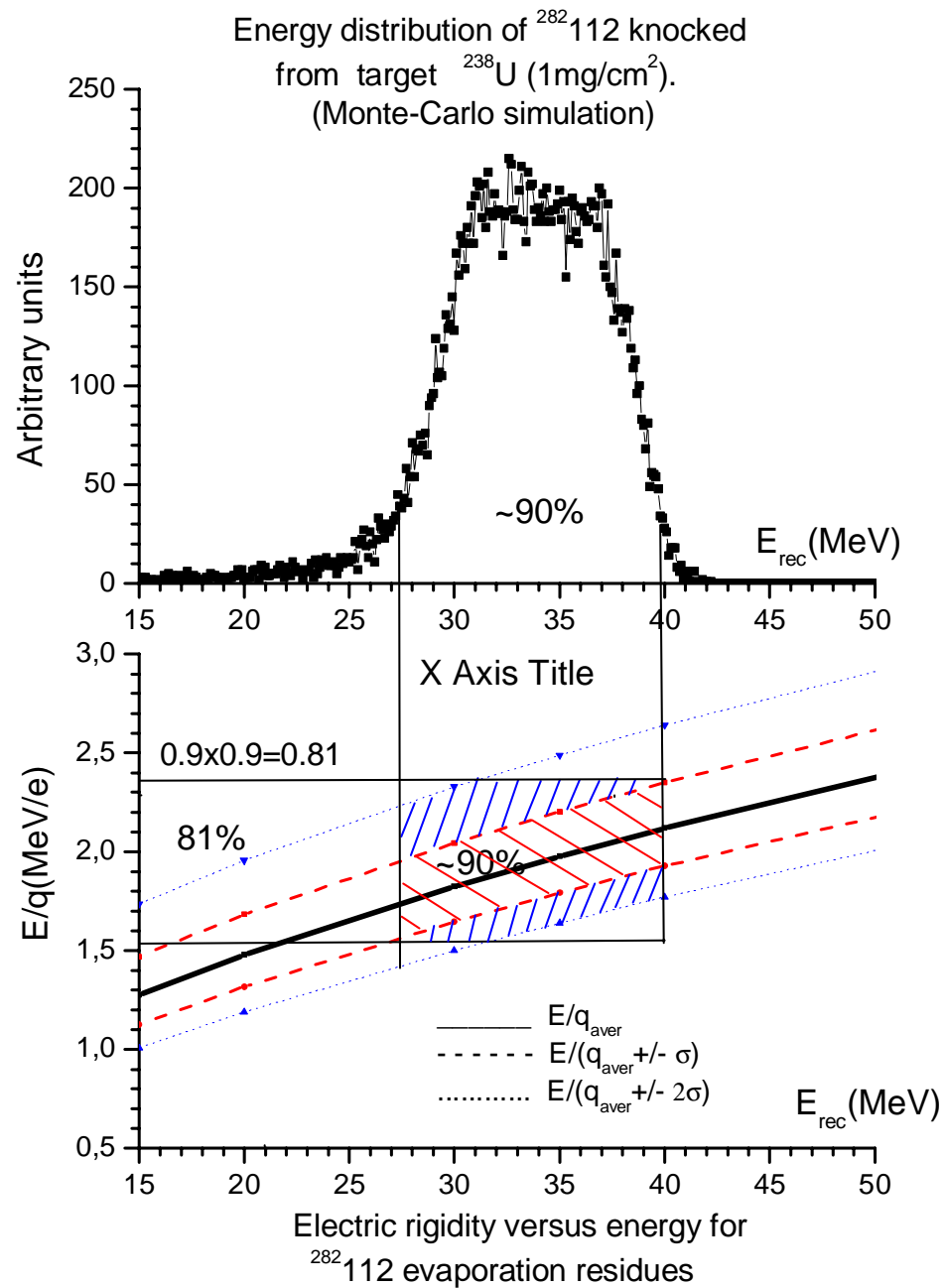


Part of recoils $^{282}\text{112}$ captured by separator
in dependence on it solid angle.
Reaction $^{238}\text{U} + ^{48}\text{Ca} \Rightarrow ^{282}\text{112} + 4n$.
Target thickness $1\text{mg}/\text{cm}^2$.
(Monte-Carlo simulation)



Program VASFIT* was used for Monte-Carlo
simulation angular and energy distributions
of $^{282}\text{112}$ evaporation residues.

* - A.G.Popeko et.al., Nucl.Instr.& Meth. B126 (1997) 294



Total efficiency of preseparator in reaction $^{238}\text{U} + ^{48}\text{Ca}$ will be:
 $K_{\text{eff.}} = 0.63 \times 0.81 = 0.51$

Formulaes for parameters calculation of recoils charge distribution are taken from article:

Sketch of electrostatic preseparator

