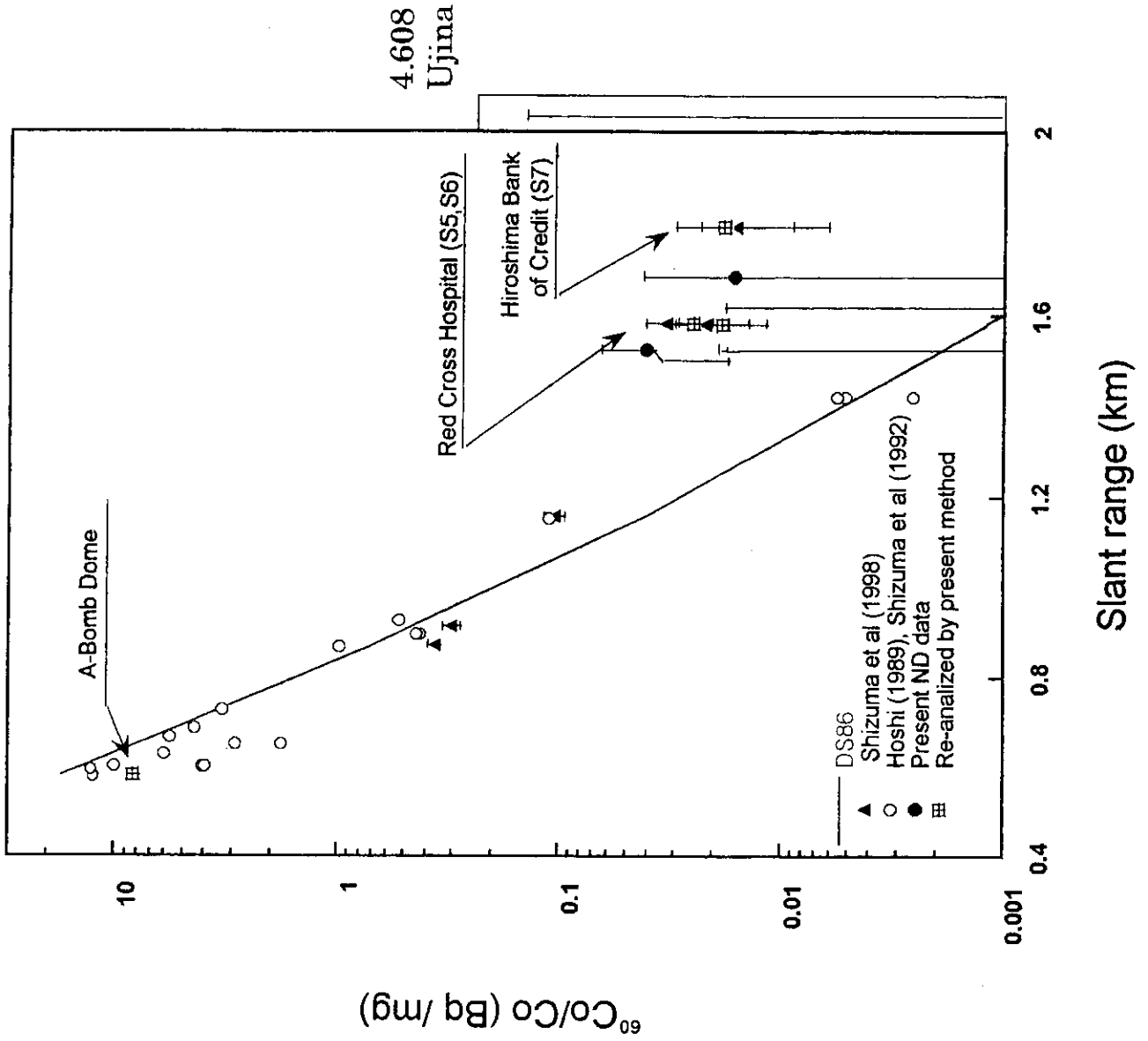


Results





Summary

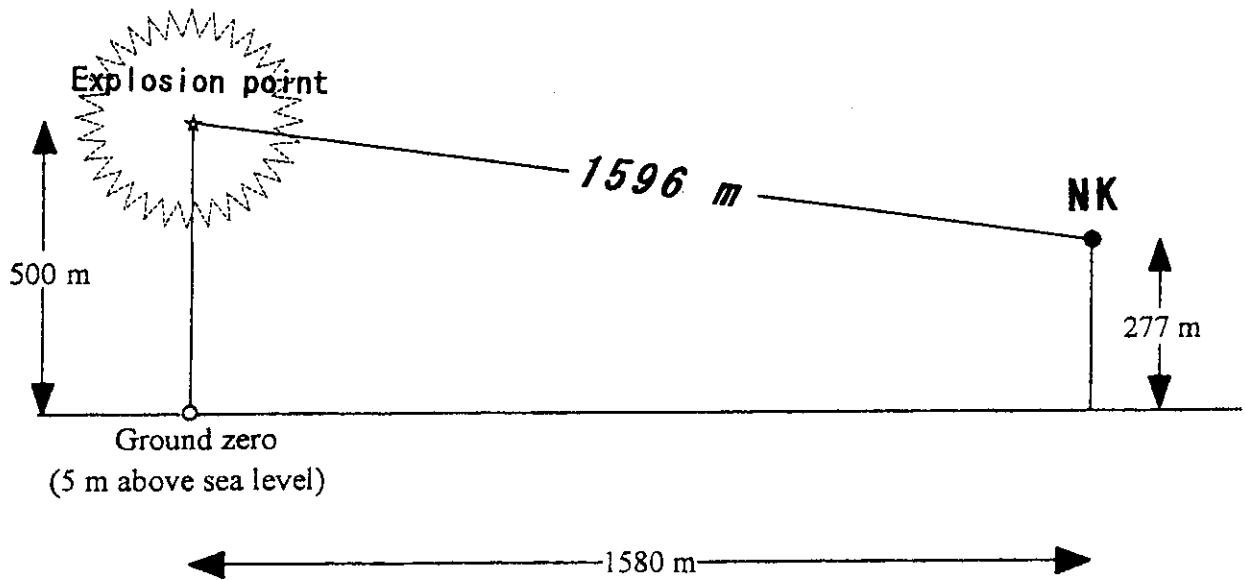
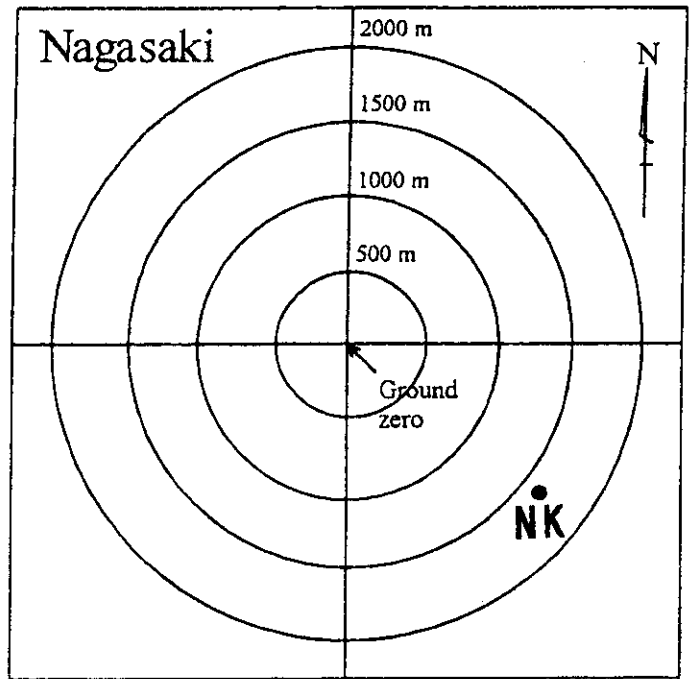
- Constrain-maximized fitting can obtain peak counts.
- Activities in five ND-samples
Three are negative, Two are positive.
Activities of the two ND-samples are very closed to the published data.

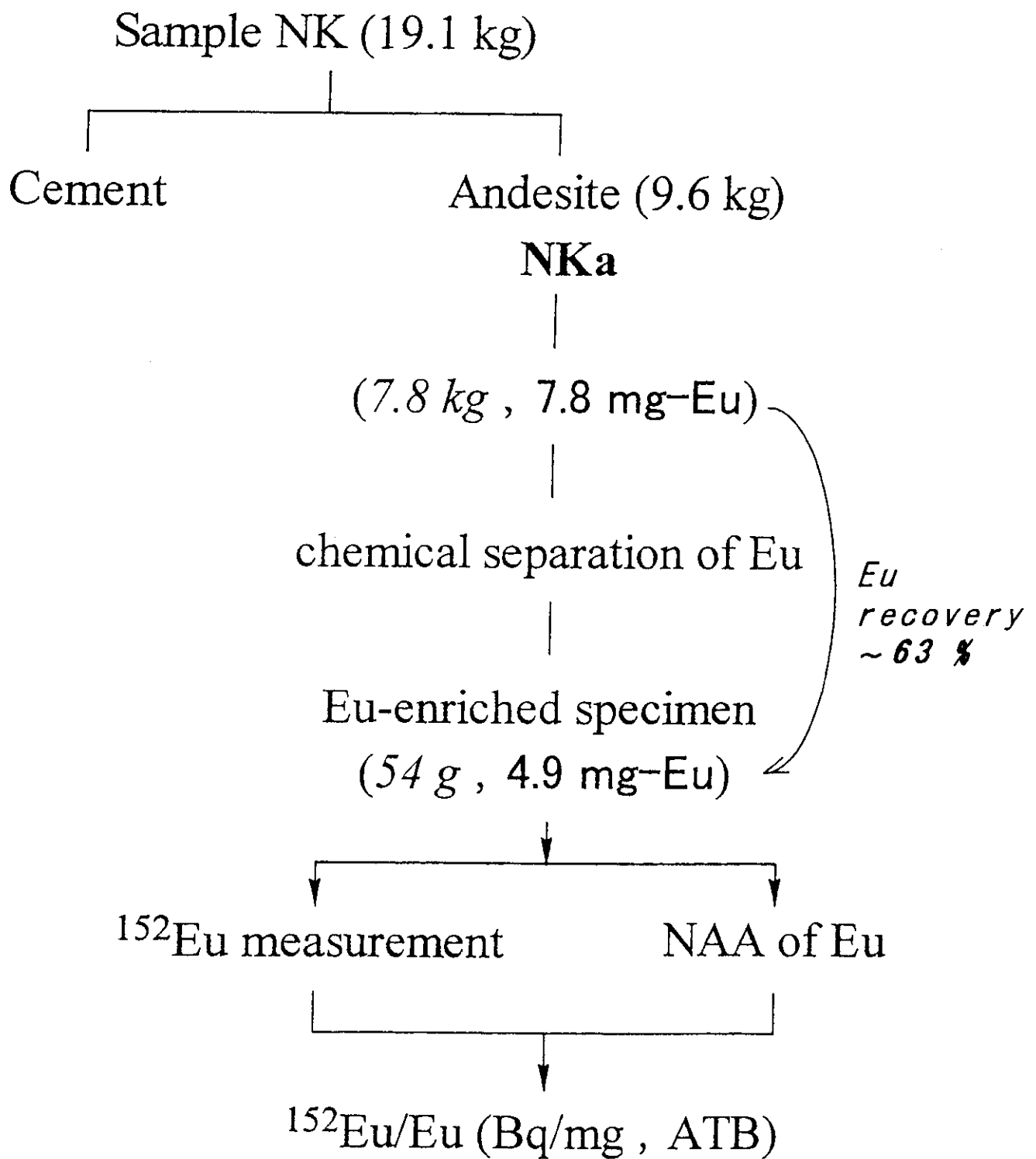
平成12年度 原爆症に関する調査研究班

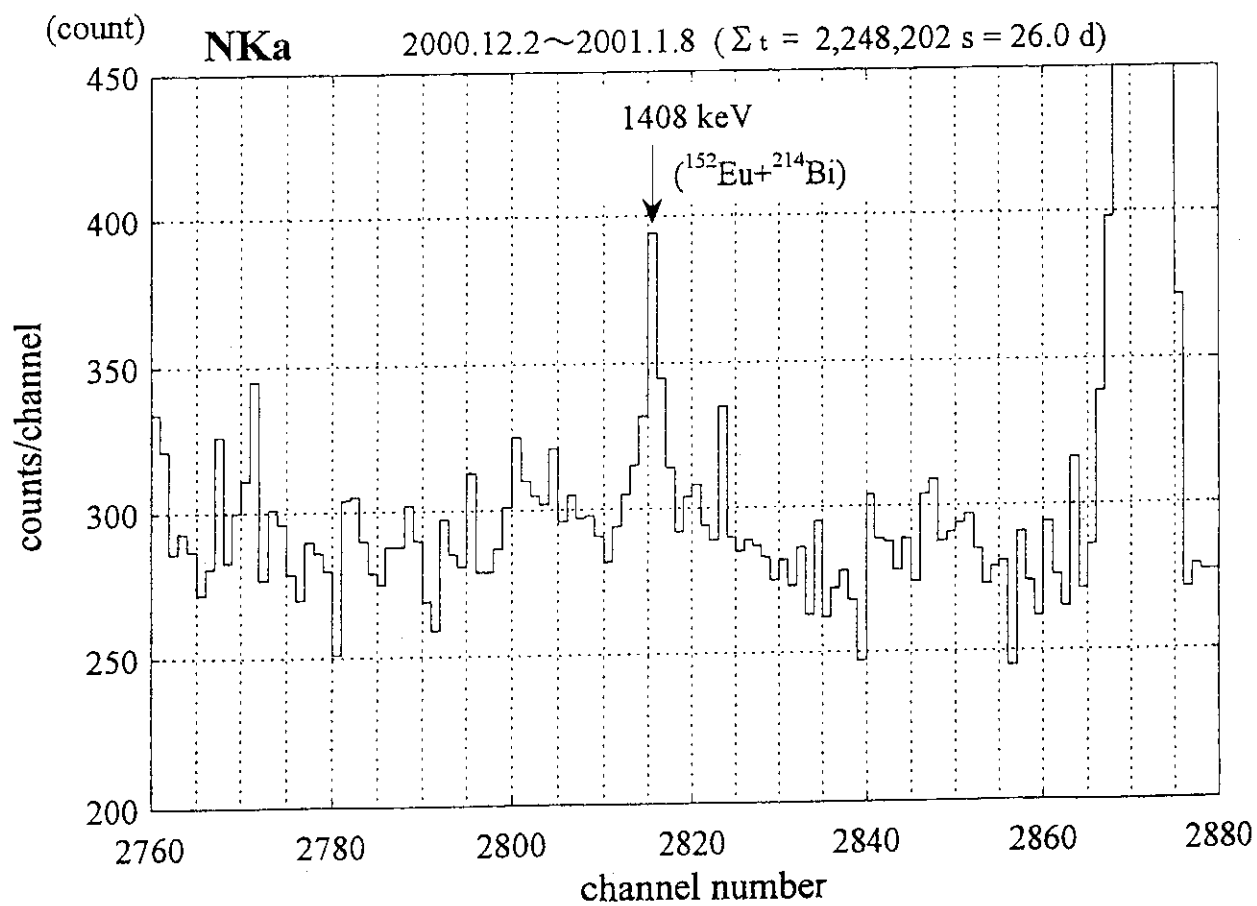
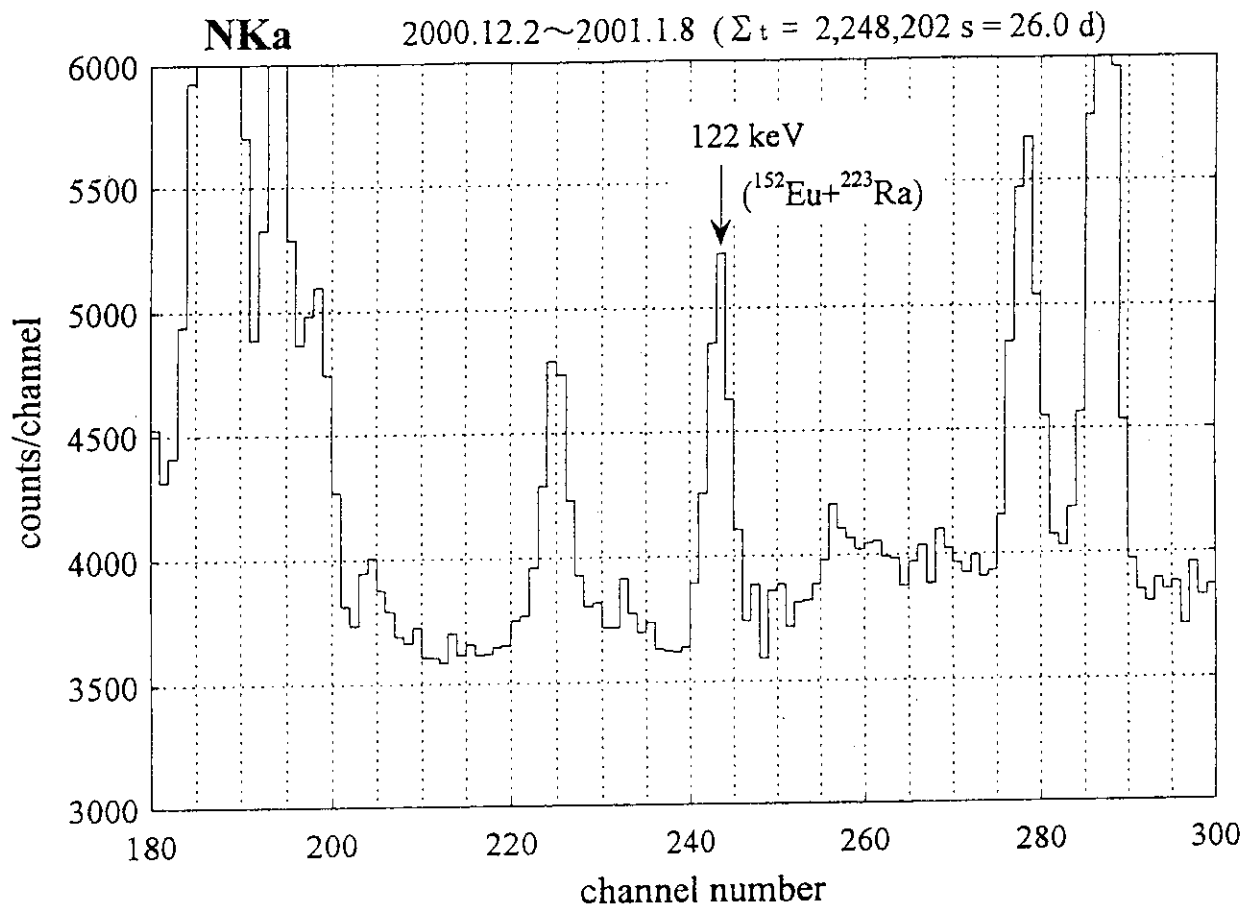
長崎原爆の爆裂点から約1.6 km地点におけるEu-152比放射能：
実測およびDS86との比較（第3報）

中西 孝（金沢大学理学部）

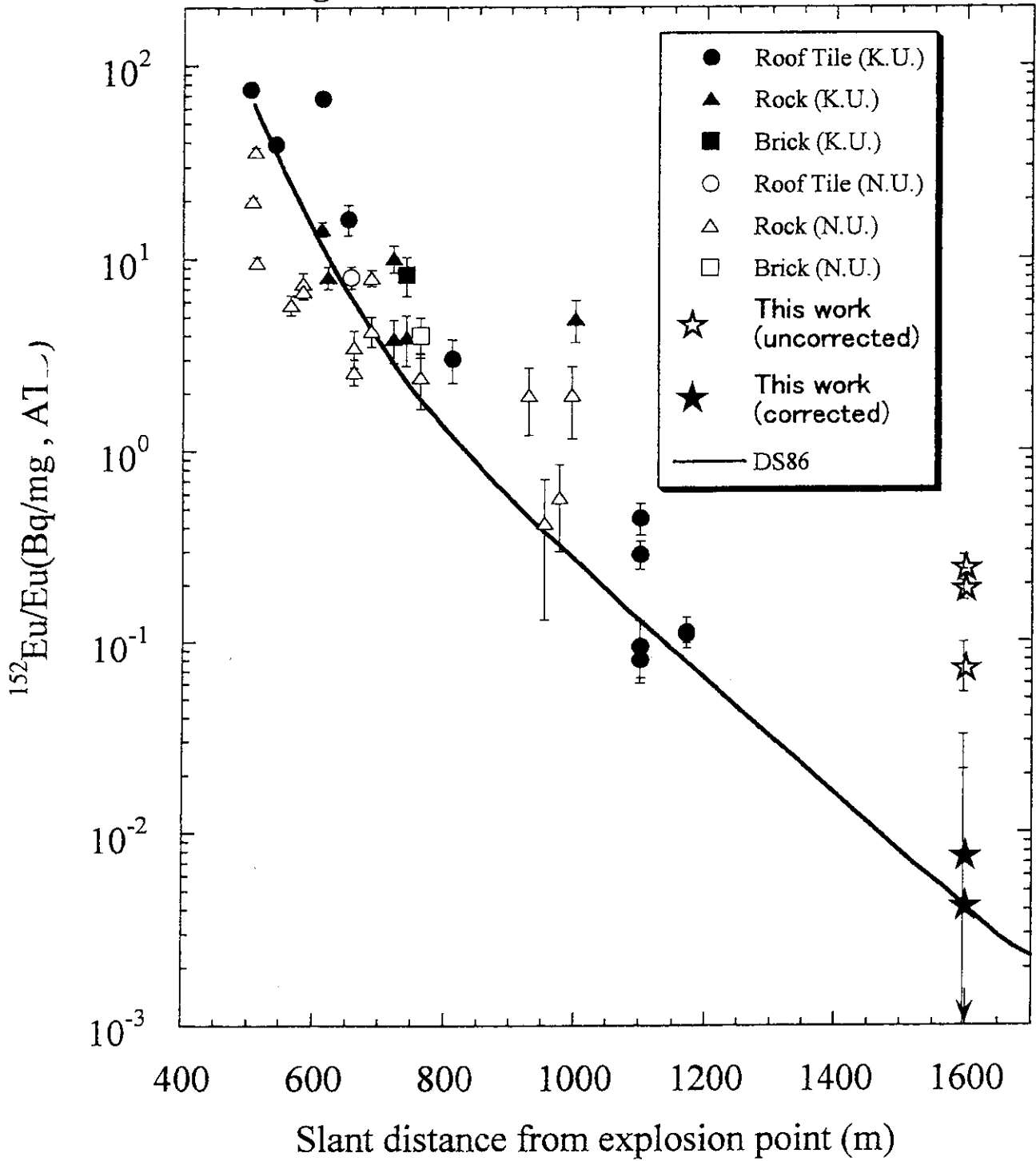
細谷 梨沙（金沢大学大学院自然科学研究科）







Nagasaki



Measurements of Ni-63 using a low-background liquid scintillation counter

T. Shibata, Y. Itoh(KEK)

M. Akamine, K. Takamiya, S. Shibata(Kyoto U.)

N. Nogawa(U. Tokyo)

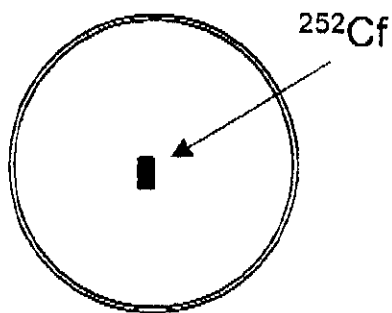
1. Data obtained by
 β counting and AMS

2. Sensitivity of β counting

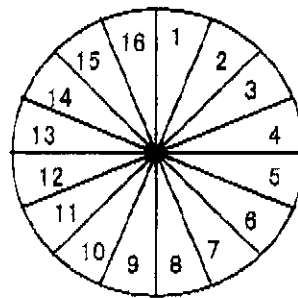
3. Data and plan for
measurements

1. Data obtained by
 β counting and AMS

Copper sample irradiated by ^{252}Cf neutrons



spherical copper



divided pieces

Measured values

β counting: 0.0096 ± 0.0009 Bq/g
 $(44.2 \pm 4.1) \times 10^6$ Ni/g

AMS: $(49 \pm 17) \times 10^6$ Ni/g

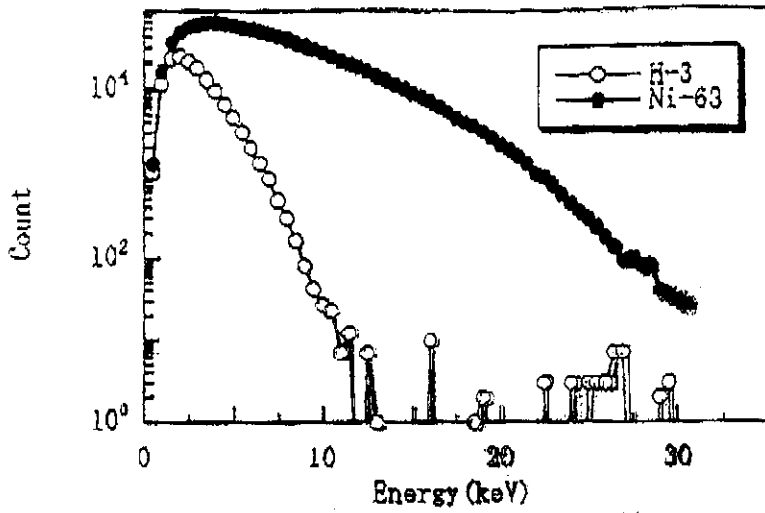
Copper wire irradiated at NIST

Measured values

sample: 29.35 g
 β counting: 1.28 ± 0.01 Bq
 $(4.36 \pm 03) \times 10^{-2}$ Bq/g
 $(201 \pm 2) \times 10^6$ Ni/g

AMS:

NIST #6 H465 $(203 \pm 12) \times 10^6$ Ni/g
NIST #6 H572 $(260 \pm 24) \times 10^6$ Ni/g



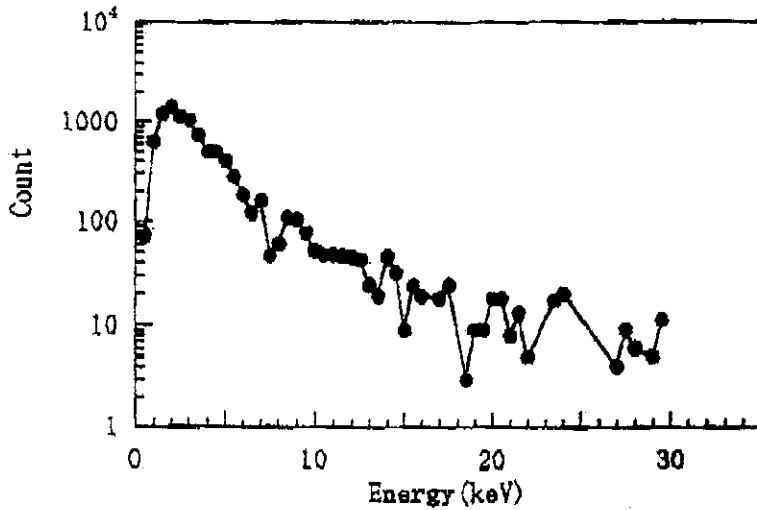
③

(半価半 log)

(A)

Standard ${}^3\text{H}$, ${}^{63}\text{Ni}$

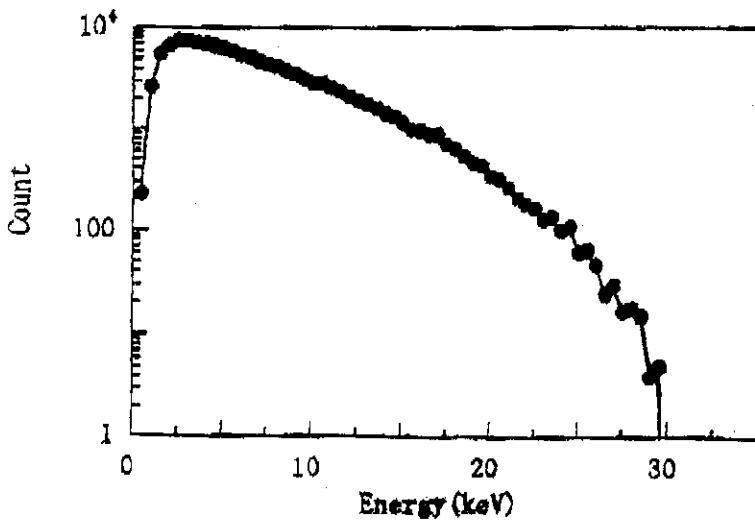
H-3とNi-63のスペクトルの比較
測定時間：900分



City Hall

(B)

避雷針
測定時間：9000分



Irradiated wire
at NIST

(C)

ストローマンの試料
測定時間：2700分

2. Sensitivity of β counting

β counting for standard sources with different intensity

Measured source intensity

0.172Bq, 0.103Bq, 0.0172Bq, 0.0086Bq

Spectrum measurement ≥ 0.01 Bq

Background count rate ~ 1.5 cpm

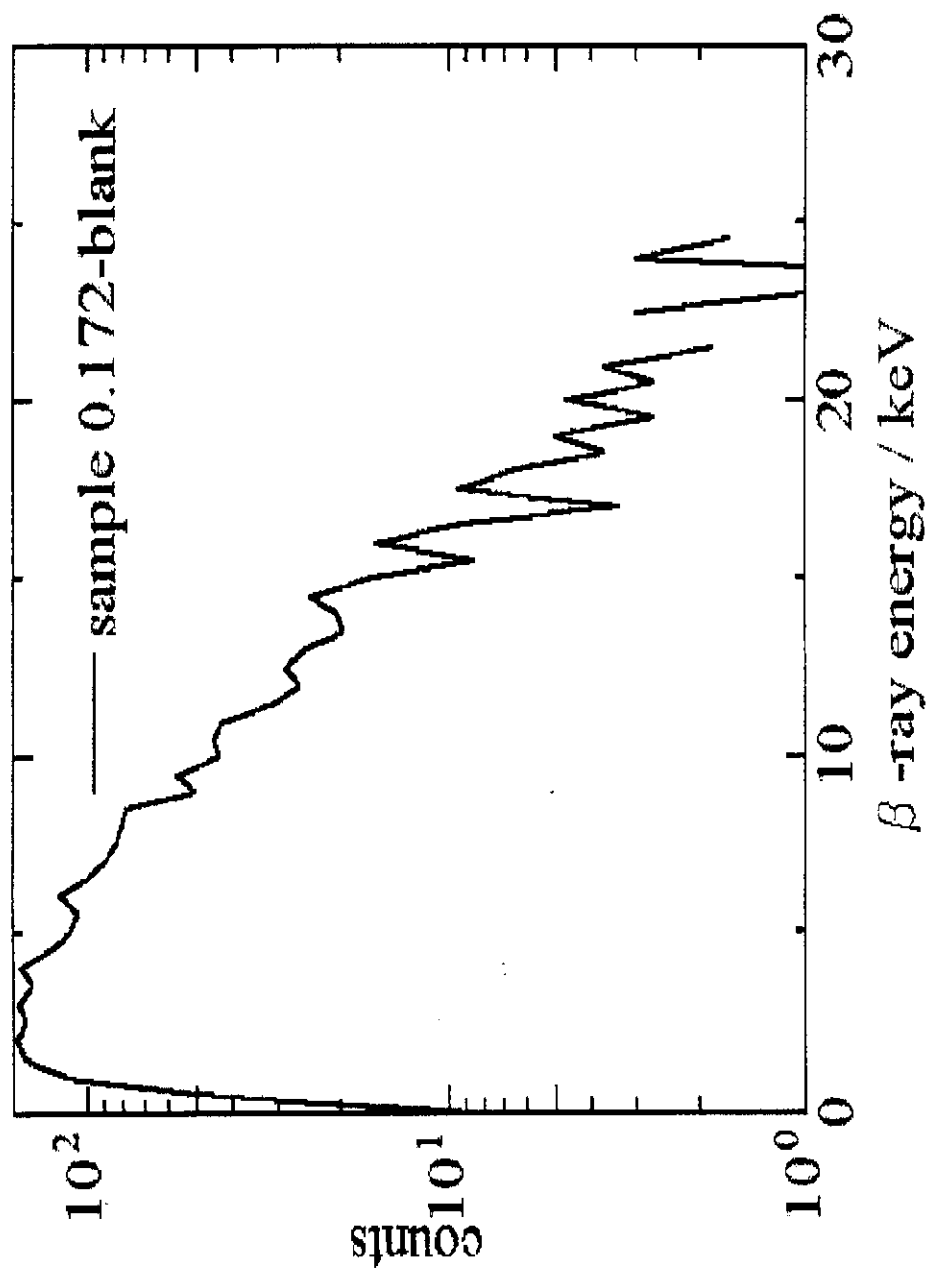
For 10,000 min counting

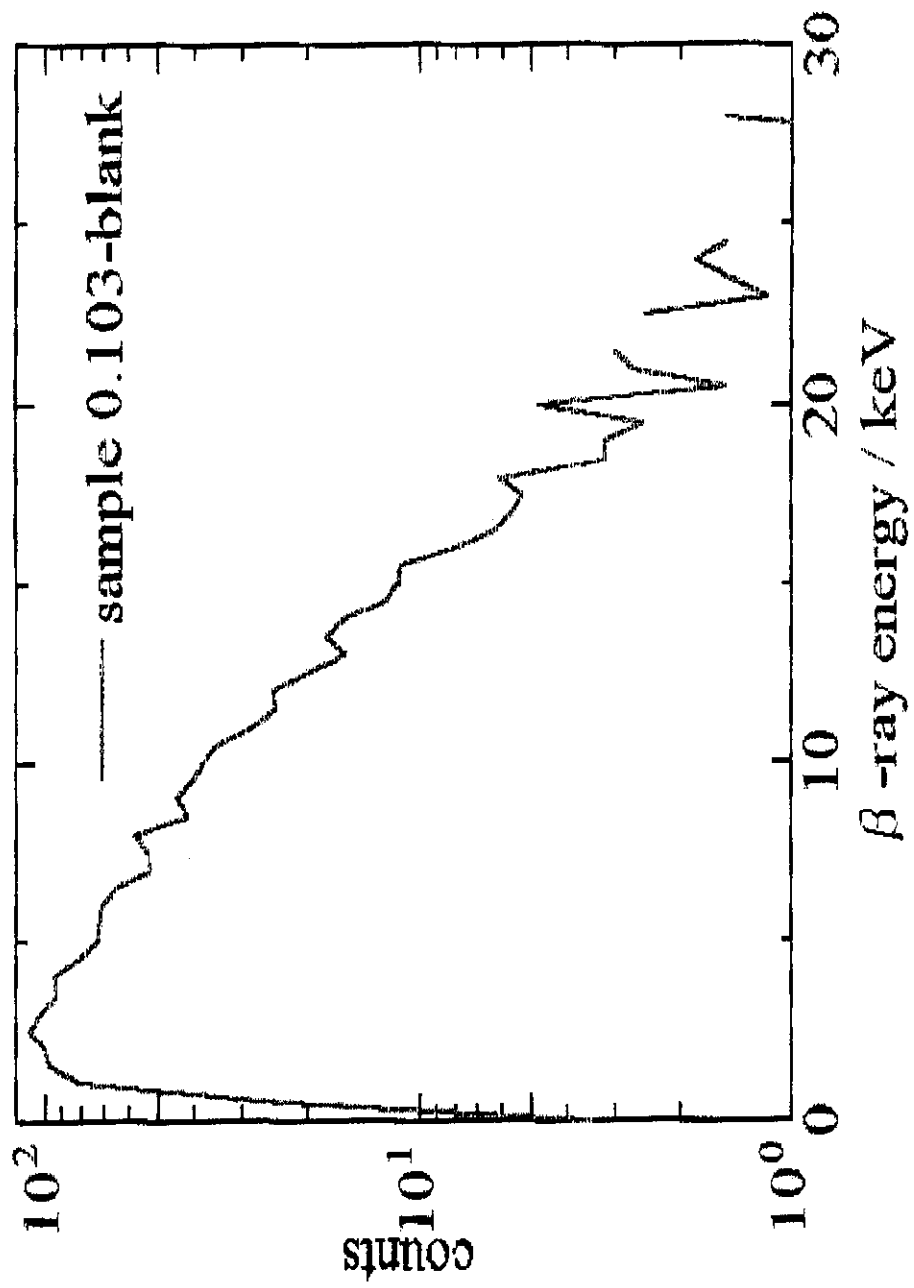
$3\sigma \sim 6.3 \times 10^{-4}$ cps

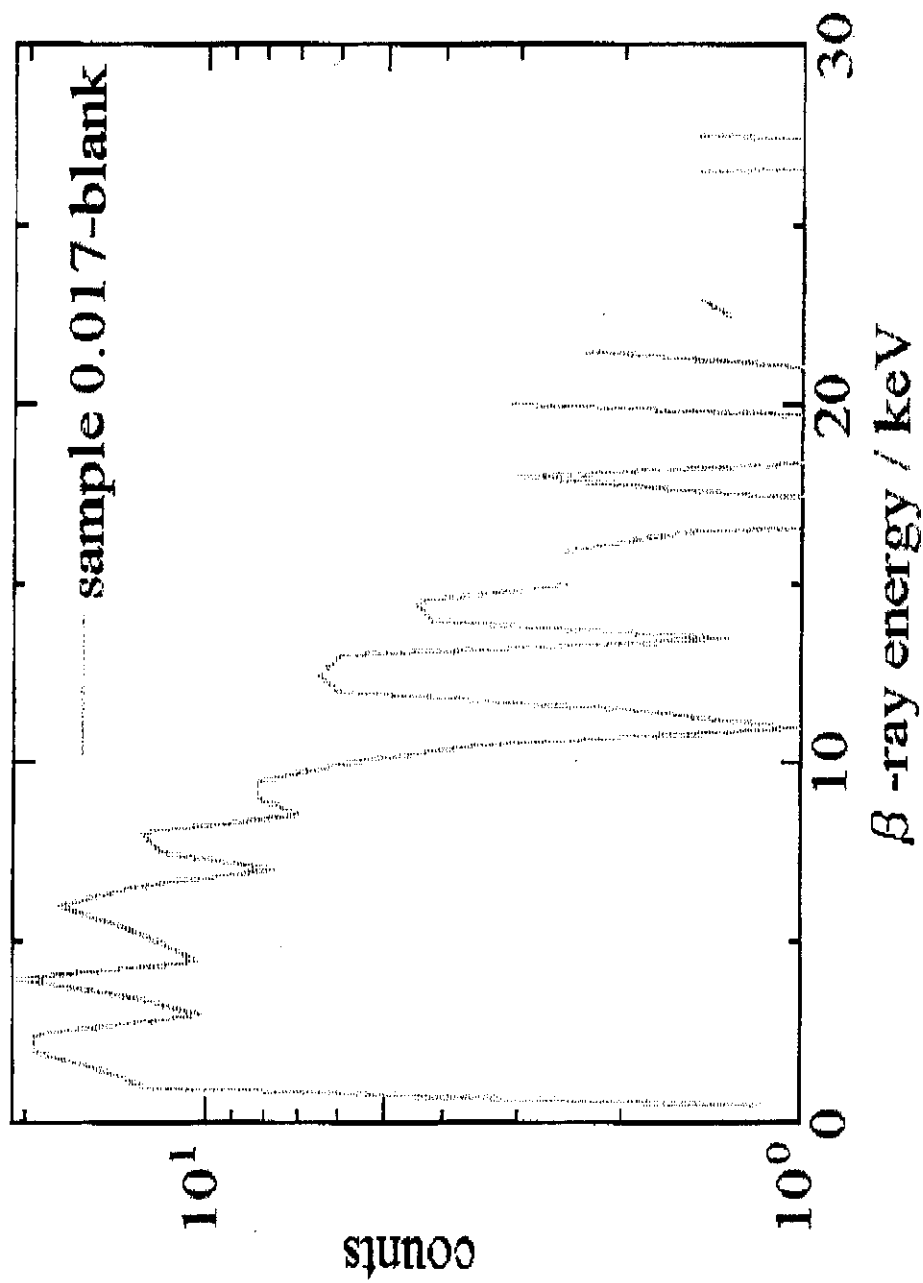
detection efficiency ~ 0.5

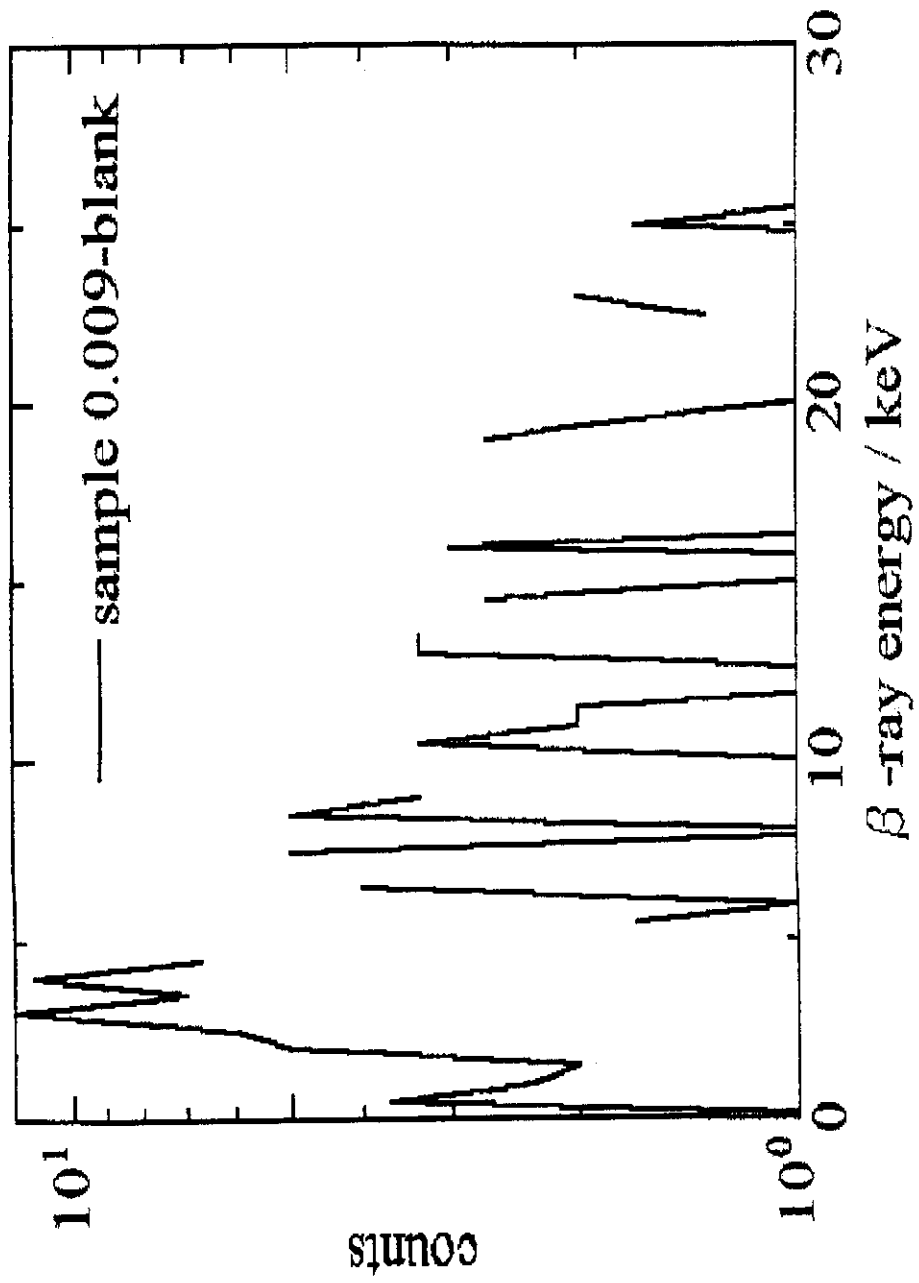
extraction efficiency ~ 0.5

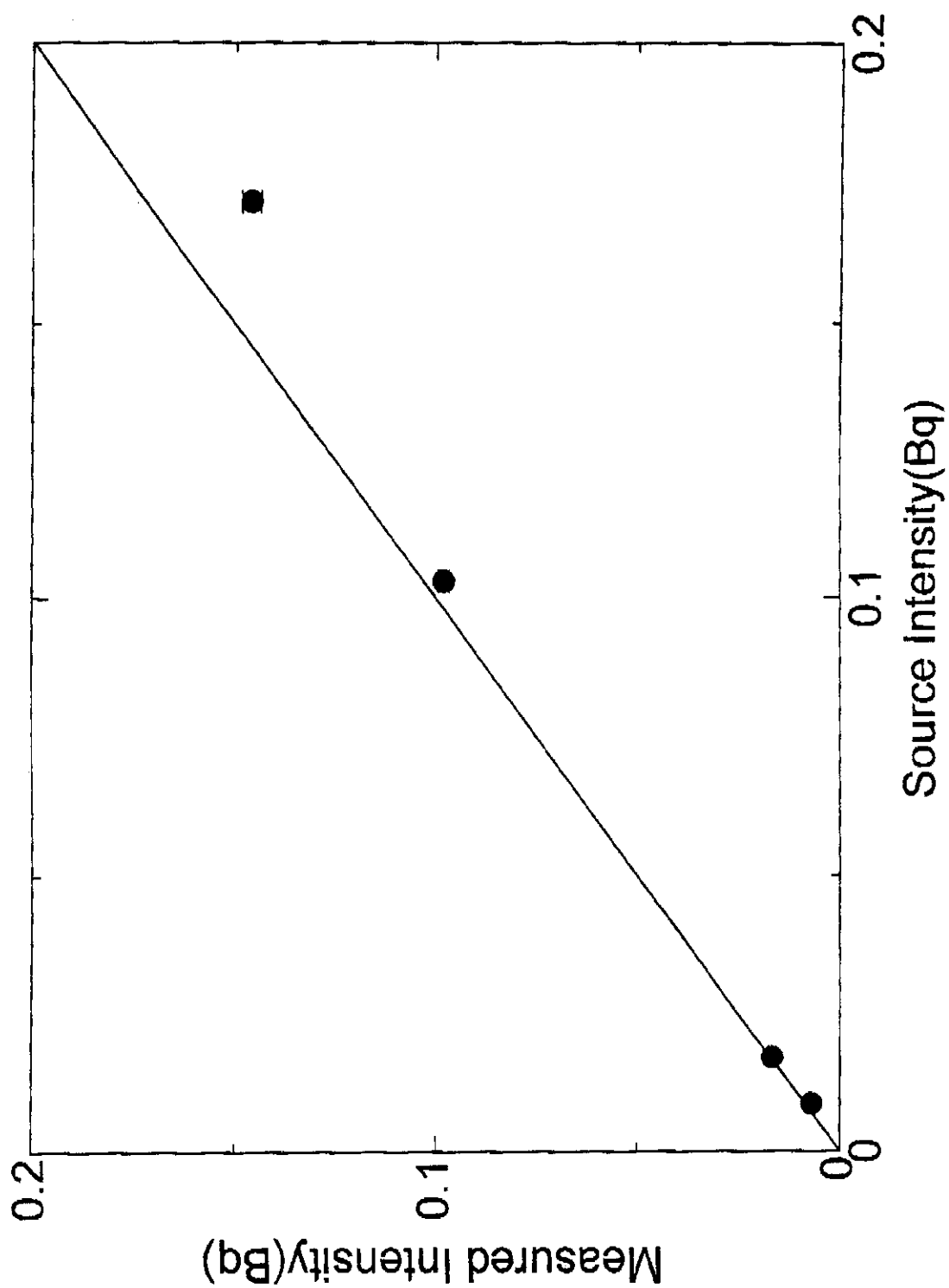
Sensitivity $\geq 2.5 \times 10^{-3}$ Bq

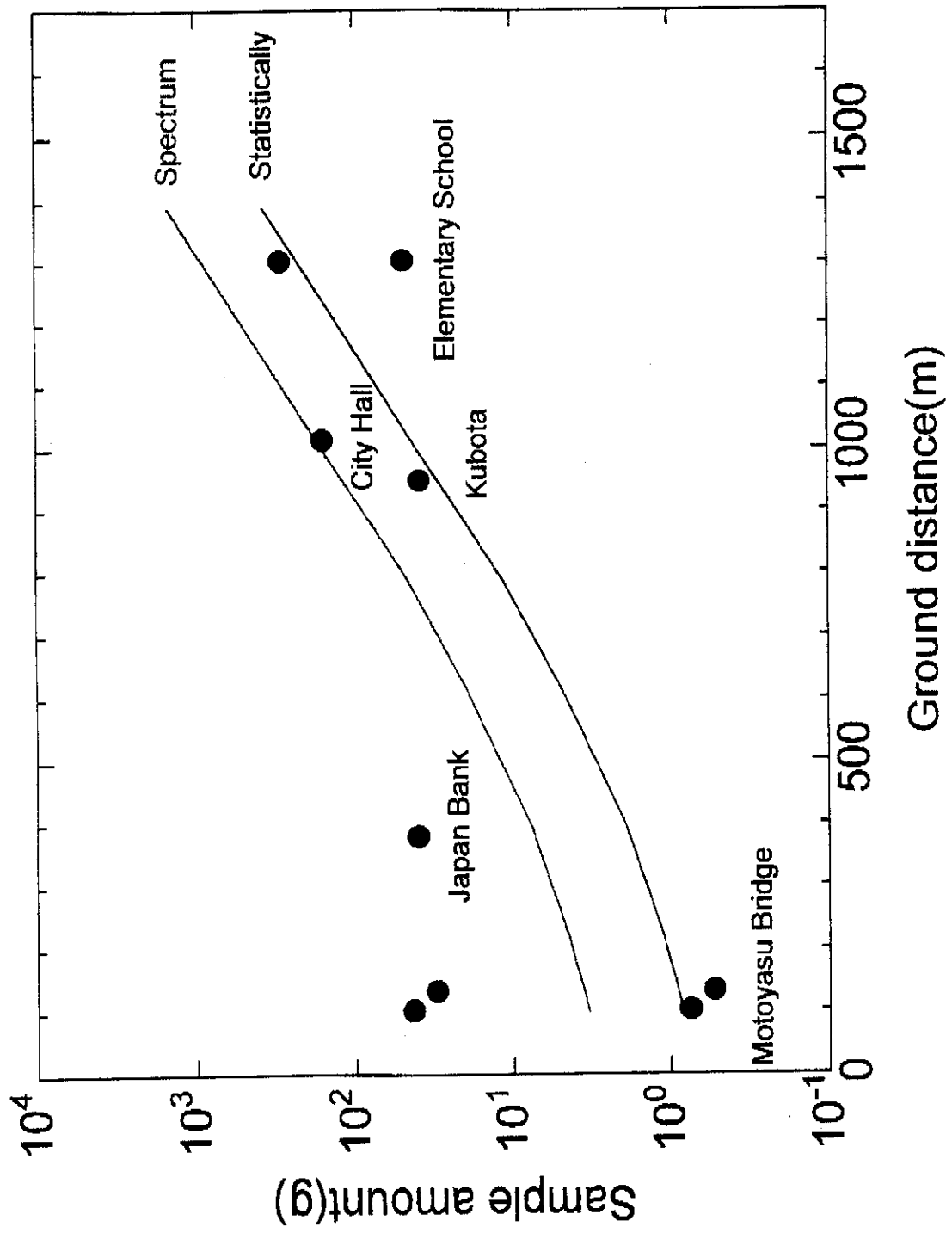












3. Data and plan for measurements

Improvement of chemical separation

Measurement of a copper sample at the elementary school(rain gutter)

Results: $(1.70 \pm 2.97) \times 10^{-5}$ Bq/g

Plan for measurements

1.Measurement for sample at Japan Bank

2.Reprocess of samples at

Motoyasu Bridge, Kubota, City Hall

Elementary school

