

Revised
OFFICE MEMORANDUM

A-91-011
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MP-DO

TO : MP-3 Staff Members

DATE: March 16, 1972

712995

FROM : R. L. Hutson

SUBJECT: BIOMEDICAL PION BEAM MEASUREMENTS

SYMBOL : MP-3

Here are some thoughts for input to the informal meeting on dosimetry, etc. to be held in Ed Knapp's office tomorrow morning.

Beam measurements can be divided into four types:

- I. Phase space measurements along the channel, etc. etc. - Any measurements used to evaluate the performance of the channel and to aid in initial tuning.

These measurements will have to be done at the outset to assure that we understand the channel tuning. They will take a relatively short time.

- II. Measurements of beam characteristics at the end of the channel.

A. Total Beam Flux and Flux Distribution (on-line) - e.g. transmission chambers (wire or strip), mosaic chambers, scintillators.

B. Contamination Measurements ($\bar{\mu}$, e) "Long" Cerenkov Counters are good in our momentum range; particle telescope; time-of-flight might be useful, although our flight paths are limited.

Techniques used for these contamination measurements do not need to be done on-line but they should be done periodically as a check.

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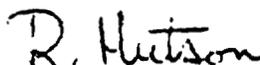
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III. Dosimetry - Any direct measurement of dose distribution in a phantom. My inclination now is to make static-beam measurements of the fan-shaped beam and to calculate the dose distribution for the scanning case by superimposing the appropriately shifted dose distributions measured in the static case.

IV. Stopping Region Visualization - Pi mesic x-ray, star gammas, etc.



R. L. Hutson

RLH:km

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