Title

Summary of the Research Progress Meeting of June 5, 1952

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SUMMARY OF THE RESEARCH PROGRESS MEETING OF JUNE 5, 1952

Sergey Shewchuck

July 11, 1952

Berkeley, California

SUMMARY OF WEEKLY RESEARCH PROGRESS MEETING OF JUNE 5, 1952

Sergey Shewchuck

July 11, 1952

I. Cloud Chamber Investigation of Low Energy Range-Energy Relations. R.G. Mills

The basis of this talk was a thesis report UCRL-1815, entitled "A Cloud Chamber Investigation of Low Energy Range-Energy Relations", dated May 13, 1952, by Robert Gail Mills. The abstract is quoted as follows:

"An expansion cloud chamber has been developed which operates at a pressure before the expansion in the region of 45 millimeters of mercury. This chamber has been applied to the investigation of the range-energy relations for protons, alpha particles, and oxygen ions in the kilovolt region using elastic recoils from mono-energetic neutrons. These curves are presented. A discussion of the chamber and general considerations in the design of low pressure cloud chambers are included."

II. π^- / π^+ at the Synchrotron. J. Carothers.

This talk likewise was based on a thesis report UCRL-1829, entitled "On the Ratio of π^+ to π^- Mesons Produced by Gamma Rays", dated June 1952, by James Edward Carothers. The abstract is quoted as follows:

"The minus to plus production ratio for pi mesons produced in the 320 Mev photon beam of the Berkeley synchrotron has been measured at 60°, 90° and 150° to the beam for beryllium and at 90° for carbon. Identification of the mesons was made by using a magnet to select a desired momentum interval, and measuring the velocity of the particles delivered by the magnet. The results were:

	Be	C
60°	1.93 ± 0.12	
90°	1.96 ± 0.10	1.27 ± 0.06
150°	1.92 ± 0.11	

The relative production of positive and negative mesons at 90°, per proton for positives and per neutron for negatives, from beryllium and carbon was:

$$\frac{\pi^+,\ Be}{\pi^+,\ C} = 1.24 \pm 0.09 \ ; \quad \frac{\pi^-\ Be}{\pi^-\ C} = 1.44 \pm 0.08$$

The limits shown are in terms of standard deviation."

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