

Research Summaries

Leona Woods Marshall Libby

Transcribed from:

Saltzman, J.D., editor. *Summaries of Physical Research in Physics and Mathematics*. Oak Ridge, TN: United States Atomic Energy Commission, Technical Information Service Extension, 1961. (p. 21).

“Contractor: New York University
Contract: AT- (30-1)-2625
Brief Title: A Research Program for High Energy Physics
Investigator: Leona Marshall

Scope of Work:

The Scope of the work is to obtain new information on nuclear forces by examining decays and nuclear interactions of elementary particles; to measure baryonic and mesonic interactions in liquid hydrogen as revealed by bubble chamber photographs and to deduce cross sections and kinematic characteristics; to compute the properties of specific magnetic lens systems required to focus the energetic particles for desired experiments; to prepare auxiliary equipment for charged particle beam adjustment and alignment. Particular Objectives are to measure the cross section for of the excited states of nucleons, mesons, and hyperons as a function of angle and energy, to measure the polarization of nucleons, hyperons, and excited hyperons as a function of angle and energy.”

Transcribed from:

Summaries of Physical Research in Physics and Mathematics. Oak Ridge, TN: United States Atomic Energy Commission, Technical Information Service Extension, 1964. (p. 75).

“Contractor: University of Colorado; Boulder, Colorado
Contract: AT-(11-1)-1330
Title: High Energy Nuclear Research
Principal Investigators: Leona Marshall, Frank Oppenheimer

Scope of Work:

The research work undertaken with AEC Contract AT-(11-1)-1330 at the University of Colorado will continue to be concerned with interactions of high energy nuclear particles. Interaction of 2.00 Bev/c negative K mesons in hydrogen have been under examination for several months. About 40,000 photographs have been scanned and approximately 5,000 interactions have been analyzed. The results will be reported within the next few months. Photographs of 2.8 Bev/c anti-proton interactions and of 5 Bev/c negative K meson interactions in hydrogen have been requested of Brookhaven. In the immediate future 1 Bev/c and 2 Bev/c negative pion interactions in hydrogen will be examined for the main angular momentum states involved by measuring the characteristics of second scatterings of protons produced in the first interactions. And in the same way, angular momentum amplitudes of 2.3 Bev/c negative K meson interactions will be examined by using information derived from second scatterings of protons recoiling from the first interactions. Half a dozen graduate students will participate in these various projects and will write doctoral theses from the results.”