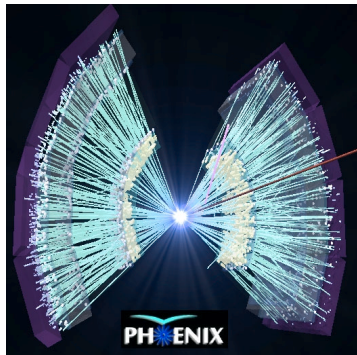


Why it is a mistake to plot theory curves on your measurements

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Original observation of Drell-Yan pairs: “massive muon pairs in hadron collisions”

VOLUME 25, NUMBER 21

PHYSICAL REVIEW LETTERS

23 NOVEMBER 1970

Observation of Massive Muon Pairs in Hadron Collisions*

J. H. Christenson, G. S. Hicks, L. M. Lederman, P. J. Limon, and B. G. Pope

Columbia University, New York, New York 10027, and Brookhaven National Laboratory, Upton, New York 11973

and

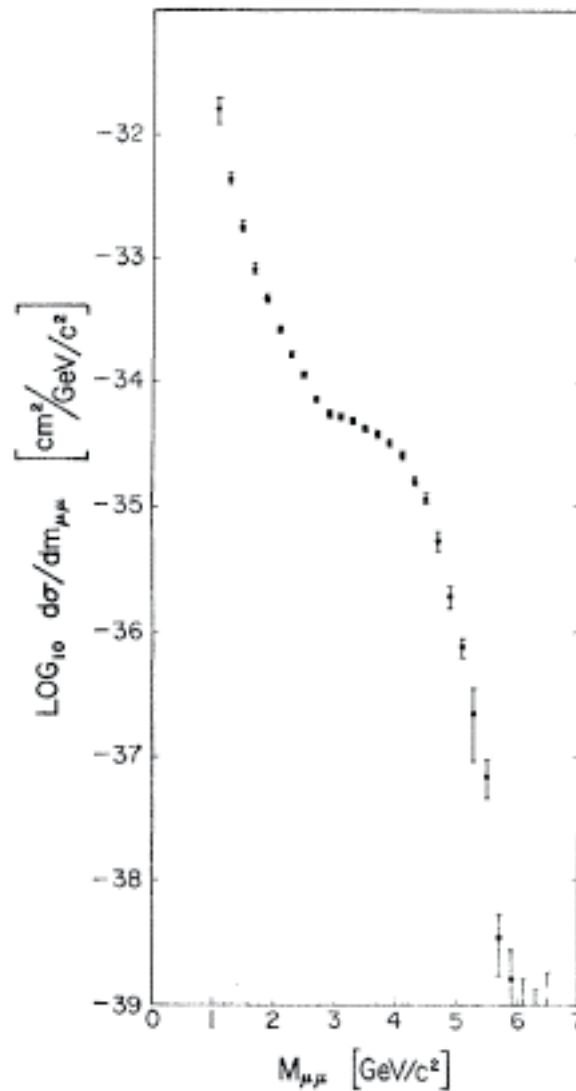
E. Zavattini

CERN Laboratory, Geneva, Switzerland

(Received 8 September 1970)

Muon pairs in the mass range $1 < m_{\mu\mu} < 6.7 \text{ GeV}/c^2$ have been observed in collisions of high-energy protons with uranium nuclei. At an incident energy of 29 GeV, the cross section varies smoothly as $d\sigma/dm_{\mu\mu} \approx 10^{-32}/m_{\mu\mu}^5 \text{ cm}^2 (\text{GeV}/c)^{-2}$ and exhibits no resonant structure. The total cross section increases by a factor of 5 as the proton energy rises from 22 to 29.5 GeV.

The Measurement



Light-Cone Analysis of Massive μ -Pair Production*

Guido Altarelli,[†] Richard A. Brandt,[‡] and Giuliano Preparata[†]

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(Received 9 September 1970)

An operator representation for the behavior of the product of two electromagnetic currents near the light cone is used to discuss massive μ -pair production in hadron-hadron interactions. Restrictions from the Stanford Linear Accelerator Center electroproduction experiments and from Regge theory are incorporated. Our predictions are in agreement with the recent Columbia-Brookhaven National Laboratory experiment.

The Measurement with “theory” curve

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4 JANUARY 1971

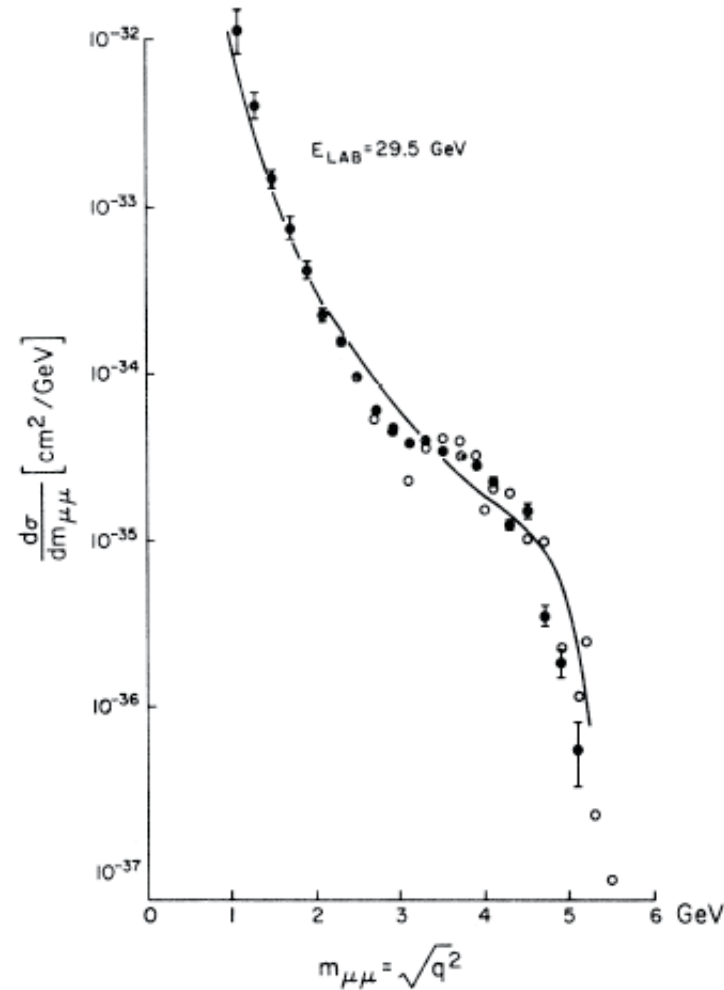
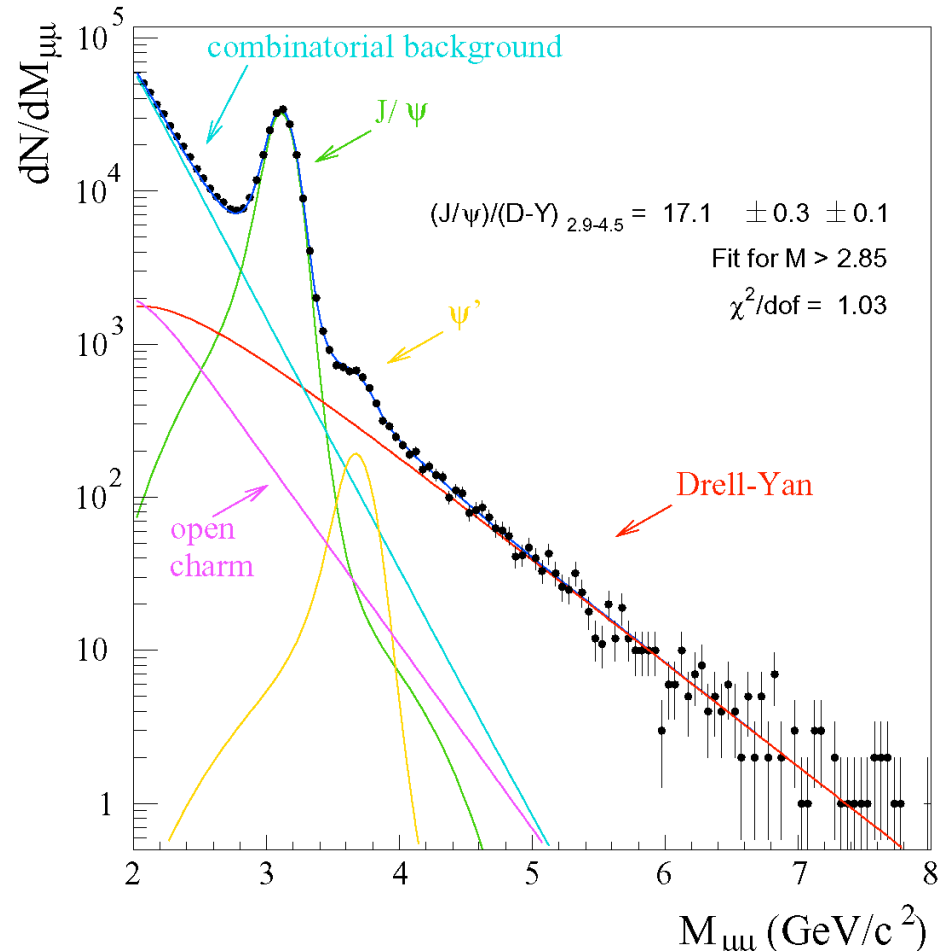
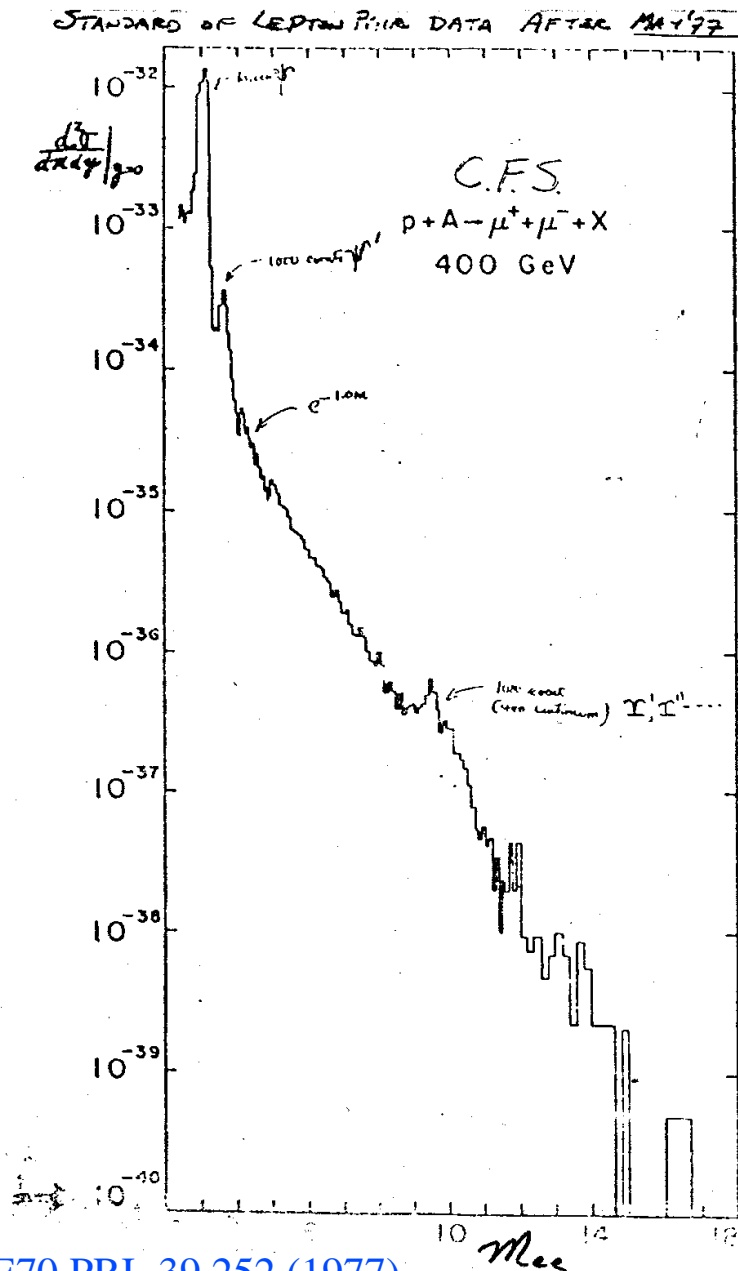


FIG. 2. Experimental cross section of Christenson *et al.*, Ref. 8.

The Truth



NA50 PLB 477, 28 (2000)