



פרופסור ג'ראלד מילר

המחלקה לפיזיקה

אוניברסיטת וושינגטון, סיאטל, ארה"ב

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סמינר משותף בפיזיקה גרעינית | Joint Nuclear Physics Seminar

TAMING THE PION CLOUD OF THE NUCLEON

Abstract

The exchange of a pion between two nucleons has long been known to be the origin of the longest-ranged component of the force. The existence of this term means that a nucleon can exchange a pion with itself, and therefore is said to have a pion cloud. For example, a proton can fluctuate into a neutron and a positively charged pion. The result is that anti-down quarks dominate the proton's sea quark distribution. However, the ability to make quantitative calculations has been hindered by ambiguities related to short-distance aspects. We show how these ambiguities may be removed, so that calculations with reliably estimated uncertainties can be made. Thus, the existence of the pion cloud will be definitively tested in an upcoming experiment.

The Seminar will be held on Monday,
19 March 2018, at 15:45,
The Seminar room, Danciger B Building,
Edmond J. Safra Campus, Givat Ram,
Hebrew University, Jerusalem

הסמינר יתקיים ביום שני,
19 במרץ 2018, בשעה 15:45,
חדר הסמינרים, בניין דנציגר B,
קריית אדמונד י' ספרא, גבעת רם,
האוניברסיטה העברית, ירושלים

כיבוד קל יוגש לפני ההרצאה | Light refreshments will be served before the lecture