



Laboratório de Instrumentação e  
Física Experimental de Partículas

## Seminário LIP

Quinta Feira, 17 de Outubro 2019 - 11:30

The light sea quarks asymmetry in proton from the SeaQuest experiment at Fermilab

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(LIP)

SeaQuest is a fixed target experiment dedicated to QCD measurements, and in particular the study of the proton sea. The asymmetry between  $u_{\text{bar}}$  and  $d_{\text{bar}}$  in the proton was reported for the first time in 1991 by the NMC CERN experiment. This unexpected result motivated further measurements at CERN (NA51) and at Fermilab (NuSea). Those also confirmed the light sea quarks asymmetry, with striking results on its  $x$  dependence. The E906/SeaQuest experiment at Fermilab was motivated by this unexpected behaviour, which could not be interpreted by any model at the time and still needs experimental confirmation. The sea quarks asymmetry can be obtained through the proton induced Drell-Yan process, when comparing the cross-sections on hydrogen and deuterium targets. The experiment took data between 2012 and 2017, using a 120 GeV proton beam. Besides the light quarks asymmetry these data are valuable for other analyses. The main features of the experiment will be shown and some puzzling preliminary results will be discussed in this seminar.

**Local: Sala de Seminários (311)**

**LIP, Av. Prof. Gama Pinto, N° 2, 1649-003 Lisboa**

**<https://indico.lip.pt/event/631/>**

**(Café e bolinhos 30 min antes)**

**O evento terá transmissão por streaming:**

**URL: <https://videocast.fccn.pt/live/lip/seminarios>**

**PIN: LIP-seminario-2019-10-17**