

# Avviso di Seminario

|           |    |        |       |               |     |
|-----------|----|--------|-------|---------------|-----|
| Martedì   | 12 | giugno | 11:15 | Sala Riunioni | (1) |
| Mercoledì | 13 | giugno | 11:15 | Sala Riunioni | (2) |

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Ricercatore

Dipartimento di Fisica Università di Pavia e INFN, sezione di Pavia

Terrà un seminario dal titolo :

**"The 3-dimensional nucleon structure"**

**Abstract :**

I will discuss the partonic structure of the nucleon in terms of two general types of parton distributions: generalized parton distributions (GPDs) and transverse momentum dependent parton distributions (TMDs). In the first seminar, I will focus on the GPDs, discussing the physical interpretation and basic properties of these distributions. To this aim I will introduce basic concepts related to the light-front quantization where the interpretation of these quantities becomes more transparent. Then, I will discuss what are the new information encoded in these functions, especially concerning the orbital angular momentum structure of the nucleon, and I will shortly review the current status of the phenomenological and experimental investigation of the GPDs.

The second seminar is addressed to the study of the TMDs. The transverse momentum dependent parton distributions open the way to access the three dimensional partonic structure of the nucleon in the momentum space. In particular, they encode unique information about the spin-orbit and spin-spin correlations of the quarks in the proton. I will present a general introduction of these quantities, discussing the role of phenomenological models in the interpretation of these distributions. I will also discuss how to obtain experimental information on TMDs from semi-inclusive deep inelastic scattering and Drell-Yan processes, with an overview of the present and future experimental plans in different laboratories (JLab, RHIC, COMPASS-CERN and HERMES-Desy).

**Note sul seminario :**

I due seminari sono parte del corso "La struttura partonica di nucleoni e nuclei" del dottorato di ricerca e hanno dunque carattere pedagogico. Tutti gli interessati sono invitati a partecipare.

Il Direttore  
Dr. Pasquale Lubrano

