



Contribution ID: 18

Type: **Oral contribution**

## The electron in three-dimensional momentum space

*Tuesday, 22 September 2015 16:50 (20 minutes)*

We study the electron at order alpha as a system composed by an electron and a photon within the framework of light-front quantization. We derive the leading-twist transverse-momentum dependent distribution functions for both the electron and photon in the dressed electron, using different gauge prescriptions. In particular, we discuss the light-cone gauge and the Feynman gauge, applying both the formalism of light-front wave function overlap representation and the diagrammatic approach. Furthermore, we present a detailed discussion of the role of the Wilson lines to obtain gauge-independent results.

**Primary author:** MANTOVANI, Luca (PV)

**Co-authors:** BACCHETTA, Alessandro (PV); PASQUINI, Barbara (PV)

**Presenter:** MANTOVANI, Luca (PV)

**Session Classification:** PARALLEL SESSION II