Contribution ID: **25**   Type: **Oral**

Photo diffusion in LArTPCs through a telegrapher equation

Wednesday 28 August 2024 09:20 (20 minutes)

We consider the relativistic photon diffusion equation for unbounded media of Lemiux et al, to which we present an analytical solution in terms of the physical parameters of a LArTPC. We account for photon absorption at the boundaries through physical considerations, instead of a boundary value problem. Then we compare our results to several Geant4 simulations and analyze the results and discuss the possibility of application for an actual detector.

Primary author: ADAMES, Márcio (Federal University of Technology - Paraná (UTFPR))

Co-authors: Dr STEKLAIN LISBOA, Andre Fabiano; ANTONIASSI, Marcelo (Universidade Tecnológica Federal do Paraná); TEIXEIRA DE SOUZA, Vitor (UTFPR)

Presenter: ADAMES, Márcio (Federal University of Technology - Paraná (UTFPR))

Session Classification: Signal reconstruction and identification

Track Classification: Signal reconstruction and identification (analysis methods, simulations): Simulations