



Contribution ID: 2

Type: **Presentation**

## Liquid xenon in nuclear medicine: state-of-the art and the PETALO approach

*Friday, 22 September 2017 15:20 (40 minutes)*

Liquid xenon has several attractive features, which make it suitable for applications to nuclear medicine, such as high scintillation yield and fast scintillation decay time.

In this talk, I will review the state of the art of the investigations of liquid xenon in medical imaging and I will describe the PETALO (Positron Emission Tof Apparatus with Liquid xenOn) concept, a novel idea, which combines liquid xenon scintillating cells and silicon photomultipliers for the readout. A first Monte Carlo investigation has pointed out that this technology would provide an excellent intrinsic time resolution, which opens the possibility of measuring the Time-Of-Flight with high efficiency. Finally, I will explore the possibility of exploiting both scintillation and Cherenkov light for a high-sensitivity TOF-PET.

**Primary author:** Dr FERRARIO, Paola (IFIC)

**Co-authors:** Mr BENLLOCH-RODRÍGUEZ, José María (IFIC); Prof. GOMEZ-CADENAS, Juanjo (IFIC)

**Presenter:** Dr FERRARIO, Paola (IFIC)

**Session Classification:** Keynote: Overview Talks

**Track Classification:** Applications (dark matter, neutrino, precision frontier, medicine, etc.)