

# XeSAT2022 - International Workshop on Applications of Noble Gas Xenon to Science and Technology



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## Time and band-resolved scintillation in time projection chambers based on gaseous xenon

Scintillation in modern xenon detectors makes use, almost exclusively, of the xenon second continuum, but there is nowadays abundant evidence of other subdominant contributions like the third continuum or neutral bremsstrahlung, whose characteristic features are dominant in some conditions, and that might be technologically usable. We report time and band-resolved measurements of the primary and secondary scintillation in xenon obtained (simultaneously) with a mini-TPC, over a range of pressures 1-10bar, electric fields (0-100V/cm/bar in the drift region and up to the onset of multiplication in the electroluminescence region) and particle types (alphas, betas). Geant4 simulations allow us to obtain absolutely normalized yields of these phenomena in the conditions described.

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