

# Time and band-resolved scintillation studies in high pressure xenon

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We have conducted systematic measurements for different particle types, pressures, and electric fields, resolving the second and third continuum components of the scintillation in high pressure xenon. We observe that the third continuum emission, despite being a subdominant contribution to the overall scintillation in the 150-500nm range, represents an important contribution to its fast component. Third continuum is both fast and immune to electric-field effects, contrary to the recombination component of the second continuum, that is slow in gas phase and strongly field-dependent. In particular, and as noted recently for the case of argon (arXiv:2012.08262), these observations enable particle-identification schemes based on the different spectral components of the scintillation.

We will present a comprehensive description of the experimental results in light of the microscopic simulation toolkit for scintillation in gases, recently developed by our group, and future prospects.

## TIPP2020 abstract resubmission?

No, this is an entirely new submission.

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