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A new measurement of Light Yield Quenching in EJ-200 and LYSO scintillators

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Scintillators such as EJ-200 plastic and LYSO inorganic crystals are widely used in current and future astroparticle physics experiments. However, significant discrepancies exist among reported measurements of light yield quenching for these materials that impacts the accuracy of expected detector responses. This study presents new experimental data obtained using muons, protons, carbon ions, and x/gamma rays, addressing these inconsistencies and providing a more precise characterization of quenching effects for these scintillators. By applying an analysis based on the modified Birks-Onsager model, we also improve the understanding of LYSO's non-linear response to low-energy x/gamma rays.

Eligibility for "Best presentation for young researcher" or "Best poster for young researcher" prize

No

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