Performance of scintillator tiles with different doping concentrations after irradiation

Geng-Yuan Jeng[a,*], Alberto Belloni[a], Sarah C. Eno[a], Kenichi Hatakeyama[d], Christopher Tully[e]

[a] *Dept. Physics, U. Maryland, College Park MD 30742 USA*
[b] *Eljen Technology, 1300 W. Broadway, Sweetwater, Tx 79556 USA*
[c] *Fermi National Accelerator Laboratory, Batavia, IL, USA*
[d] *Baylor University, Waco, Texas, USA*
[e] *Princeton University, Princeton, NJ, USA*

Abstract

The performance of plastic scintillator degrades when exposed to radiation. We present results on degradation of the light output of scintillator tiles when irradiated by a ^{60}Co source for a variety of concentrations of the primary and secondary dopant. Tiles made from a blue scintillator with blue-to-green wavelength shifting fiber and for green scintillator with green-to-orange wavelength shifting fiber are presented.

Keywords: organic scintillator, radiation hardness, calorimetry

1. Introduction

ampling calorimeters using plastic scintillator tiles with wave length shifting fibers, such as the CDF plug calorimeter [**?**], are popular due to their low cost and ease of construction.

*Corresponding author
Email address: Geng-Yuan.Jeng@cern.ch (Geng-Yuan Jeng)

2. Conclusions

3. Acknowledgements

This work was supported in part by U.S. Department of Energy Grant YYYYY.

References