Abstract Submitted
for the APR18 Meeting of
The American Physical Society

A study of high energy gamma intensities in ^{208}Tl decay from a ThO_2 powder GOWOON KIM, INSIK HAHN, Ewha Womans University, YEONGDUK KIM, DOUGLAS LEONARD, EUNKYUNG LEE, MOOHYUN LEE, Institute for Basic Science, SUYEON PARK, Ewha Womans University, WOONGU KANG, Institute for Basic Science — The gamma decay intensities for E > 3 MeV from ^{208}Tl decay have very large uncertainties (100%) in the NNDC database. New measurements with smaller uncertainties are desirable for understanding nuclear decay properties of the nucleus and high energy gamma background for other rare decay experiments. The AMoRE experiment, which is a neutrinoless double beta decay search with a Mo_{100} (Q=3.034 MeV) based crystals at the YangYang Underground Laboratory (Y2L) in Korea, can be affected by the gammas over 3 MeV from the ^{208}Tl. The High Purity Germanium (HPGe) group at the Center for Underground Physics (CUP) measured a 2kg ThO_2 powder with a 100% efficiency HPGe detector in the Y2L to obtain more accurate numbers of the high energy gamma intensities from ^{208}Tl. A 10 cm thick lead plate was installed between the ThO_2 powder and the HPGe detector to block low energy gammas. The experimental set-up, Monte Carlo simulation results for detection efficiencies, and a preliminary result will be presented.

Gowoon Kim
Ewha Womans University

Date submitted: 12 Jan 2018 Electronic form version 1.4