Extended source efficiency correction and optimization of the sample position to measure the concentrations of NORM using a HPGe detector

P. Ochoa $^{1,2,a}$, F. Bautista $^{1,2}$, W. Rodriguez $^{1,2}$, E. Fajardo $^{1,2}$, F. Cristancho $^{1,2}$

$^1$Departamento de Física, Universidad Nacional de Colombia, Bogotá, Colombia
$^2$Grupo de Física Nuclear GFNUN, Bogotá, Colombia
E-mail: $^a$lapochoap@unal.edu.co
Methodology

Spatial variations in the measurement efficiency are used to calculate the concentration of radioactive material in extensive sources.
Spatial variations in the measurement efficiency are used to calculate the concentration of radioactive material in extensive sources. The HPGe coaxial detector used has a relative efficiency 40% compared with a standard NaI of $3'' \times 3''$ detector.

![Figure 1: Scheme of the experimental set-up.](image)
Results

Figure 2: Solid angle values for positions studied in this work.
Results

Figure 2: Solid angle values for positions studied in this work.

Figure 3: Comparison de intrinsic efficiency for different heights.
Thank you !!!