Roughing of Drilled Holes in LYSO

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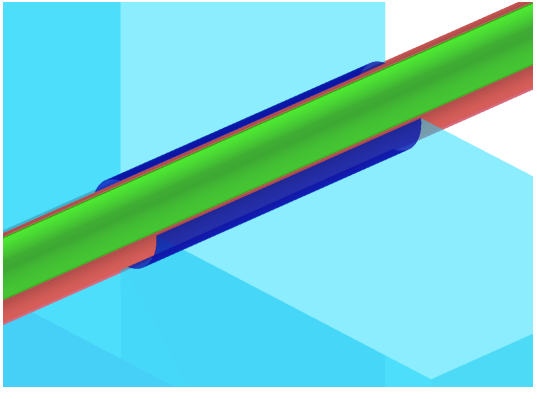
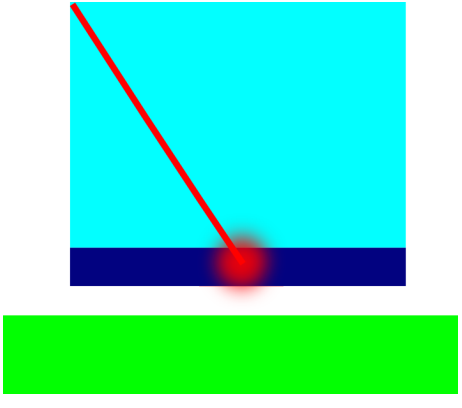
Simulation of Roughing (very simplistic)

Thin layer of LYSO, $L = 100\ \mu\text{m}$, has additional diffusing properties described by L_{diff}. A photon can be absorbed and re-emitted isotropically with probability

$$P = \exp\left(-\frac{L}{L_{\text{diff}}}\right)$$

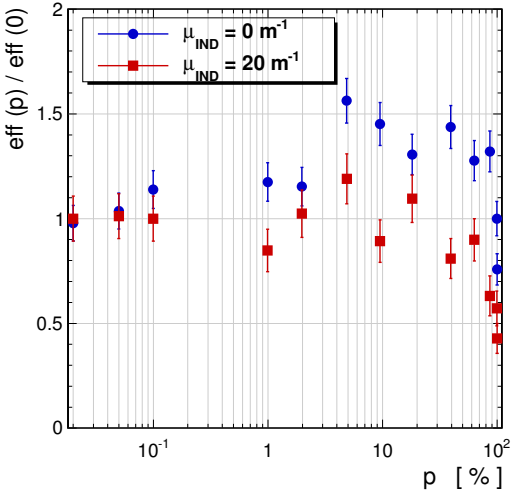


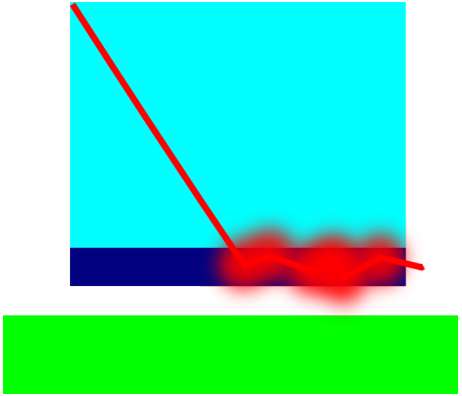


Light Collection Efficiency for Roughed / Polished Surface

No visible loss of light due to roughing in non-damaged and highly damaged LYSO

Amusing artifact of implementation: drop of efficiency at P close to 100% due to multiple diffusions → Brownian Movement





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