

Simulating the ARAPUCA - DUNE's next generation light sensors

Arapuca is “bird trap” built by Brazil’s natives. On the other hand, our ARAPUCA is a light trap that increases the collection area of regular SiPMs and it is the sensitive element upon which DUNE’s whole photon detection system is based upon. Here we present the journey to build a reliable state-of-the-art simulation of such device, highlighting the process of modeling its dichronic filters, wavelength-shifting wave guides, and silicon photo-multipliers. As a result we obtain its efficiency and are able to study how its performance could be affected by small changes, either intended or not.

Working group

WG6

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