

## Executive summary

### An improved trigger for Askaryan neutrino detectors

#### **What is this contribution about?**

An optimization of the trigger for radio neutrino (Askaryan) detectors that measure UHE neutrinos ( $E > 10^{17} \text{eV}$ ) by detecting radio flashes generated by neutrino interactions in ice.

#### **Why is it relevant / interesting?**

We show a simple and inexpensive way to increase the sensitivity by up to 50%. As UHE neutrino detection is likely statistics limited, this will have significant impact on the science output.

#### **What have we done?**

First, a method to properly compare different trigger schemes is developed. Then, we studied the impact of the bandwidth in the trigger channels on the neutrino sensitivity.

#### **What is the result?**

The sensitivity can be improved by 50% by restricting the bandwidth to 80-200MHz compared to the currently used 80-800MHz.