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## Overview of in-ice radio simulations for neutrino detection

*Tuesday, July 12, 2022 2:30 PM (30 minutes)*

I will give a brief overview of the status quo of the simulation of in-ice radio detectors (such as ARIANNA/ARA/RNO-G/IceCube-Gen2). I will focus on the current limitations and how Corsika 8 can be used to solve them. I will discuss the event geometries that are relevant for us: 1) in-ice showers that develop in a homogeneous medium with radio signals propagating through inhomogeneous media 2) in-ice showers developing in an inhomogeneous medium (with a density gradient), 3) air showers transitioning from air into ice.

I will discuss additional propagation effects (e.g. birefringence, internal reflection layers, second-order effects predicted by FDTD simulations, ...) and a possible way to include them in C8 through reciprocity relations.

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