

# $\chi$ ar $\nu$ : a tool for neutrino flux generation from WIMPs

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- This poster presents a new tool for neutrino flux generation from WIMP annihilation and decay for indirect searches of dark matter.
- **Motivation:** There have been extensive efforts on indirect searches of dark matter. The search for dark matter with neutrinos is important since they are the only courier that can reach detectors from dark matter processes in dense environments, such as the core of the Sun or Earth, or the edge of the observable Universe. In order to detect neutrino signals from DM, it is important to simulate the neutrino flux arriving in detectors.
- **Method:** We developed a package computing the neutrino yield and propagation to detectors through different standard model channels in multiple astrophysical environments. The neutrino production makes use of `PYTHIA`, with a new calculation of electroweak interactions incorporated. The propagation is handled by  `$\nu$ SQuIDS`. The secluded dark matter scenario is also included.
- **Results:** We are able to compute the neutrino flux from WIMP annihilation/decay arriving at Earth. It is flexible to use for example by taking external initial flux and neutrinos propagation parameters.