

Status of the R.A. budget for the plan C (prepared with SaG4n)

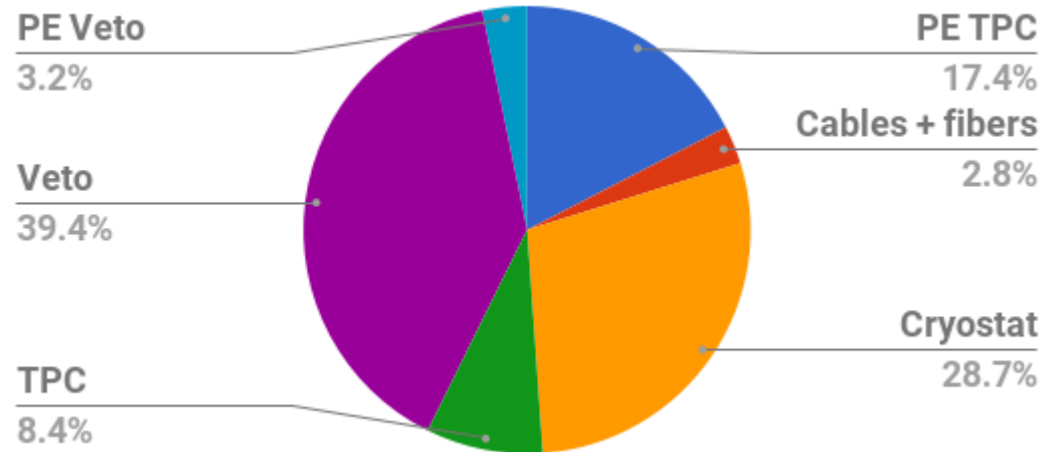
Maxim Gromov (SINP MSU, JINR), Vicente Pesudo (CIEMAT)

DS-mat working group meeting
27.07.2021

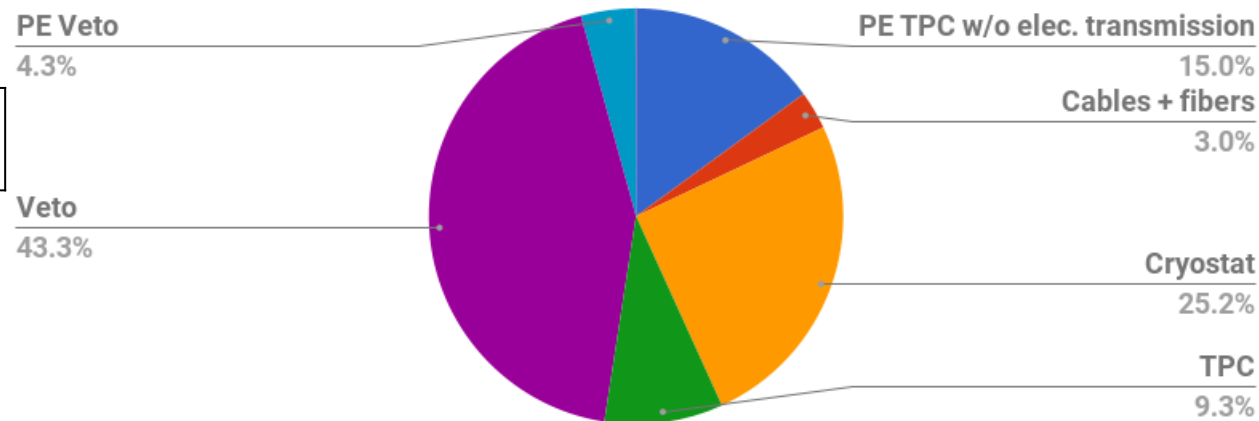
General overview

Original goal for all types of backgrounds: **0.1 NR after cuts in 200 t y**

Plan C



July 13



July 27

Electrical transmission	4.0E-5	0.04%
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SaG4n with JENDL-TENDL2017: 0.099 NR after cuts in 200 t y (Decrease by 9%)

The information of the TPC PE is based on the PDU+ design (provided by Alessandro)

Backup slides

Some notes

1) Automatic recalculation in all the budgets
when changing the masses of materials, activities and inefficiencies

2) A link to the neutron budgets

with NeuCBOT and TENDL2015 (TALYS-1.6):

[neutron_bg_Apr21_PlanC](#) ←

This is the only place
where the masses,
activities and inefficiencies
can be changed

with NeuCBOT and TENDL2019 (TALYS-1.95):

[neutron_bg_Apr21_PlanC_with_NeuCBOT+TALYS-1.95_22-06-2021](#)

with SaG4n and TENDL2017:

[neutron_bg_Apr21_PlanC_with_SaG4n_copy_12-07-2021](#)

Tools

NeuCBOT

with the **TENDL2019** library of the (α,n) cross sections (based on with TALYS-1.95)

Author: Shawn Westerdale

Links: [article](#), [code](#)

Features:

- Fast calculations (but without propagation of particles in the specified medium)
- relies only on theoretical calculations performed with the TALYS code

SaG4n 1.1

with the **JENDL-TENDL2017** library of the (α,n) cross sections and the secondary neutron energy-angular distribution data

Authors: the **CIEMAT** group, namely Emilio Mendoza, Daniel Cano-Ott, Vicente Pesudo, Roberto Santorelli

Links: [article](#), [code](#)

Features:

- based on Geant4 (propagation of particles in the specified medium)
- relies on available experimental data and theoretical calculations