

	GRAS SIMULATION SUMMARY	Order number: 123456789
	Simulace zařízení UIEHTGUWEIFGHS298	Generated on: 2025-05-30 10:57:02

1. SCOPE OF THE SIMULATION

This document presents the results of computer simulations for radiation analysis performed using a local copy of GRAS (version 5.0.1) in combination with Geant4 version 10.07 (patch 2) for L²SIM project 123456789.

The simulation was performed for the following analyzed volumes:

- TPS_BDS-CISHAB-MDL-0002-ELV214_v007-ELV214_v6-NA1-FP011-FP10telo001-DETECTOR_MATDEF_Silicon_PV
- TPS_BDS-CISHAB-MDL-0002-ELV214_v007-ELV214_v6-U1-AD585-DETECTOR_MATDEF_Silicon_PV
- TPS_BDS-CISHAB-MDL-0002-ELV214_v007-ELV214_v6-VT1-LCC3-DETECTOR_MATDEF_Silicon_PV
- TPS_BDS-CISHAB-MDL-0002-ELV214_v007-ELV214_v6-NA1-FP011-FP10telo001-DETECTOR_MATDEF_Silicon_PV
- TPS_BDS-CISHAB-MDL-0002-ELV214_v007-ELV214_v6-U1-AD585-DETECTOR_MATDEF_Silicon_PV
- TPS_BDS-CISHAB-MDL-0002-ELV214_v007-ELV214_v6-VT1-LCC3-DETECTOR_MATDEF_Silicon_PV
- TPS_BDS-CISHAB-MDL-0002-ELV214_v007-ELV214_v6-NA1-FP011-FP10telo001-DETECTOR_MATDEF_Silicon_PV
- TPS_BDS-CISHAB-MDL-0002-ELV214_v007-ELV214_v6-U1-AD585-DETECTOR_MATDEF_Silicon_PV
- TPS_BDS-CISHAB-MDL-0002-ELV214_v007-ELV214_v6-VT1-LCC3-DETECTOR_MATDEF_Silicon_PV

Table [1.1] shows parts of the spectrum used in the simulation.

Table 1.1: Parts of the spectrum used in the simulation

PART OF THE SPECTRUM	NUMBER OF EVENTS	PHYSICAL VOLUME
Solar Proton	60000	NA1-FP011
Trapped Electron	2e+05	NA1-FP011
Trapped Proton	60000	NA1-FP011
Solar Proton	60000	U1--AD585
Trapped Electron	2e+05	U1--AD585
Trapped Proton	60000	U1--AD585
Solar Proton	60000	VT1--LCC3
Trapped Electron	2e+05	VT1--LCC3
Trapped Proton	60000	VT1--LCC3

Performed analysis is summarized in table [1.2].

Table 1.2: Performed analysis parts of the spectrum used in the simulation

ANALYSIS MODULE	UNIT
DOSE	MeV
FLUENCE	counts/cm2
LET	MeV/cm
NIEL	MeV/g

Table [1.3] summarizes calculated Total Ionizing Dose (TID) per analyzed volume and spectrum.

Table 1.3: Calculated TID per analyzed volume

ANALYZED VOLUME	SOLAR PROTON	TRAPPED ELECTRON	TRAPPED PROTON	TOTAL
NA1-FP011	$8.132\text{e}+03 \pm 1.5\text{e}+02$	$3.413\text{e}-01 \pm 1.5\text{e}-02$	$2.802\text{e}+00 \pm 4.5\text{e}-02$	$8.135\text{e}+03 \pm 1.5\text{e}+02$
U1--AD585	$9.959\text{e}+03 \pm 2.0\text{e}+02$	$1.375\text{e}+00 \pm 6.1\text{e}-02$	$3.417\text{e}+00 \pm 5.9\text{e}-02$	$9.964\text{e}+03 \pm 2.0\text{e}+02$
VT1--LCC3	$1.048\text{e}+04 \pm 1.9\text{e}+02$	$1.325\text{e}+00 \pm 5.2\text{e}-02$	$3.482\text{e}+00 \pm 6.4\text{e}-02$	$1.048\text{e}+04 \pm 1.9\text{e}+02$