

Introducing DUNE's Background Task Force

Juergen Reichenbacher, Simon Peeters



**DUNE Background Task Force
Kick-Off Meeting
Oct 26, 2018**

Task Force Charge

“The Background Task Force is asked to assess the maximum allowable level of background interactions originating from (1) neutrons generated from within the surrounding cavern rock and (2) from radioactive impurities introduced within the detector elements during their construction and installation such that the main science drivers for the DUNE experiment (CP violation measurement, supernova detection, and proton decay searches) can be accomplished. The Task Force may also comment on whether more stringent requirements on these background levels would allow DUNE to pursue other physics topics such as solar neutrino measurements.

Based on the determined maximum allowable levels for these types of interactions, the Task Force should propose appropriate procedures for the screening of detector materials, cleanliness requirements to be followed during the detector installation process in the underground area, and potential enhancements to detector designs that will ensure background levels in the detector remain well below their maximum allowed levels. Approved Task Force recommendations will be passed to the DUNE Technical Coordination organization, which will be responsible for working with the Far Detector Consortia to ensure that appropriate processes are incorporated within the QA/QC plans currently under development for each of the detector sub-systems. The Task Force will also be responsible for the production of a specific TDR section focusing on the overall background mitigation strategy.”

Expressions of Interest

Even for prelim. Expressions of Interest shoot us an email, please!

Google sheet:

https://docs.google.com/spreadsheets/d/15H_QyMQSephCdCWaZppeaVWJYCIURXdp1V5xBStSh-M/edit#gid=0

task	institution	people
background simulations with MARS15 code	FNAL	Nikolai, Sergei
background simulations w/ LArSoft, surface alpha assays, gamma assays, neutron flux measurements, dust level assays	SDSMT	Juergen, Jason, James
DAQ and bg simulations	Sussex	Simon, Pierre
materials assays	PNNL	Eric Hoppe, Eric Church, Henning Back
u/g gamma-assays, ICP-MS	Black Hills State	Brianna
u/g gamma-assays, ICP-MS	LBNL	Kevin Lesko
u/g gamma-assays, ICP-MS	UCL	Cham
u/g low-energy bg models	INFN-Genova	Marco Pallavicini
neutron modeling	UMN	Matthew Strait
radon monitoring	SDSMT	Luke
radon, u/g gamma-assays, bg simulation, neutron sources	University of Bucharest	Mihaela Parvu, Ana Chiriacescu, Ionel Lazanu

Listserver for bg task force still waiting approval...

TDR discussion next week.

Please, let us know if you think a new item/issue needs to be described in TDR.