

NEUTRINO DETECTOR in ARMENIA

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The NDA project

NDA - Neutrino Detector in Armenia

The purpose is to establish an underground research center in Armenia

Location of the site

Main office –Yerevan Physics Institute

Salt Mine, north of the Yerevan

Connections

Main road Yerevan-Tbilisi

Bus and train connection to the Georgia

Zvartnots airport with 4km runway: direct flights to the most European countries

Erebuni airport

Gyumri airport (reserve airport to Zvartnots): 100 km from Yerevan, (1.5 h car drive)

Avan Salt Mine LTD

(about 373m deep)

*The facilities of the Yerevan Physics
Institute for the neutrinoless double beta
decay experiment*

Produces food salt (NaCl)

GasProm gas reservoirs in Slat Mine

1200m deep (ca 2800mwe)

Each reservoir is about 50 000 m³

Present day technique allows to make 30 000 – 40 000 m³ cavities in one year

The salt send to the Avan Mine Ltd. for production of the food salt

Technically possible to make a cavity up-to 500 000 m³

Neutrino baseline to NDA

From CERN distance 3100 km

GOLDEN DISTANCE

From Protvino: distance ca 1900 km (on the same line Baksan Neutrino facilities!!!)

Possibilities to host detectors at DNA

Technically possible to construct caverns
very easily

Caverns ca 50 000 m³ available

Caverns up to 500 000 m³ analysed

Transport of heavy items via Railway is
possible

Environmental risks are absent

Costs for constructing an underground DNA

Large underground hall:

Hall construction ca 30 EUR/m³

Building inner structures 20 EUR/m³

Plans: 10 EUR/m³

Taxes 20% (or absent)

Lift to the surface ca 10 MEUR

Cost of the construction of the 500 000 m³
underground hall at 1200m deep is estimated to be
ca 40 MEUR

Conclusions

Salt Mine near Yerevan is very suitable for
neutrino baseline experiments

CERN NDA 3100 km

Protvino – NDA ca 1900km

Very large halls can be easily constructed

Very good transport options

Environmentally risks are absent

GZK Neutrino







