VHE data format in KM3NeT

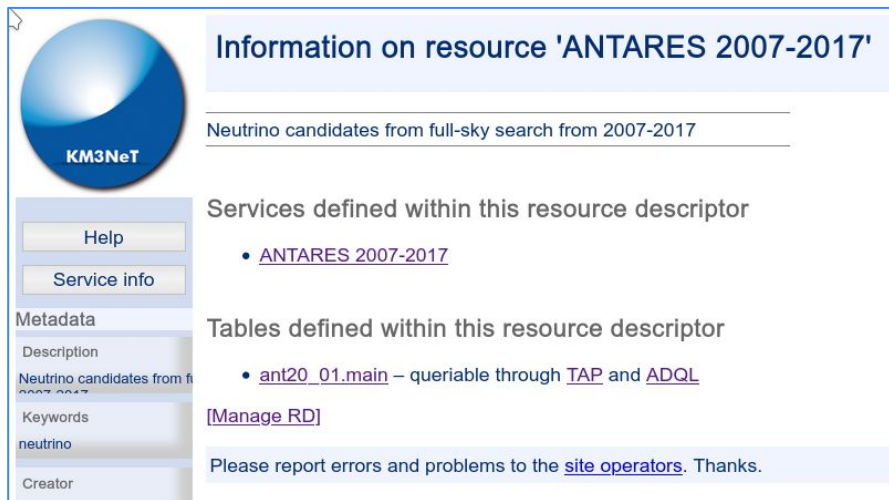## Current status and expectations

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Current data dissemination

Virtual Observatory

- ANTARES data as test data set (vo.km3net.de)
  - Registered as data provider to the VO (ivo://km3net.org)

Information on resource 'ANTARES 2007-2017'

KM3NeT

Neutrino candidates from full-sky search from 2007-2017

Services defined within this resource descriptor

- ANTARES 2007-2017

Tables defined within this resource descriptor

- ant20_01.main – queriable through TAP and ADQL

[Manage RD]

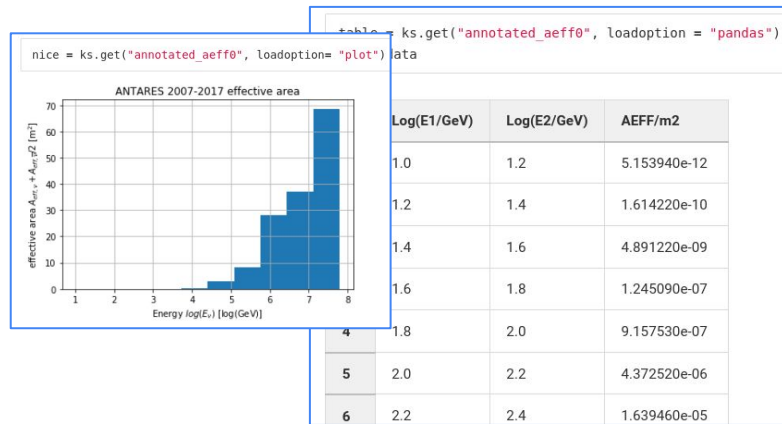Please report errors and problems to the site operators. Thanks.

| Help |
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Metadata

Description
Neutrino candidates from f~~ull~~
~~2007-2017~~

Keywords
neutrino

Creator

VHE data format in KM3NeT

Open Data Center

- Server for all "non-VO" data (opendata.km3net.de)
- Self-defined formats, currently hdf5 for events

```
table = ks.get("annotated_aeff0", loadoption = "pandas")
```

```
nice = ks.get("annotated_aeff0", loadoption= "plot")data
```

ANTARES 2007-2017 effective area

	Log(E1/GeV)	Log(E2/GeV)	AEFF/m2
	1.0	1.2	5.153940e-12
	1.2	1.4	1.614220e-10
	1.4	1.6	4.891220e-09
	1.6	1.8	1.245090e-07
4	1.8	2.0	9.157530e-07
5	2.0	2.2	4.372520e-06
6	2.2	2.4	1.639460e-05

Future: ESCAPE data lake in EOSC (?)

Relating neutrino data to GADF

GADF	KM3NeT	future?
Event format	"Simple" event in VO	Keep & interlink to extended data sets
	"Complex" event in data center	Adding FITS, align entries with GADF
IRF	Under development (stand alone)	Draw from GADF

Plans on data format development

- Open Science Program within KM3NeT

  - Declared goal of open data, established Open Science Committee
  - Developing publication pipelines for data sets
  - Considering IRF formats and framework

- In coordination with others

  - ESCAPE context: exchange with IVOA on high-energy data format
  - dedicated discussion & development with CTA (also first [master thesis @ECAP](#))

High interest to interconnect work streams & co-develop with GADF

Backup

The KM3NeT Open Science System

VHE data format in KM3NeT