

KASCADE_HighEnergyData_runs_0877-7417_HDF5

general information

Set name	KASCADE_HighEnergyData_runs_0877-7417_HDF5		
Data selection	NABOO		
Data format	HDF5		
Number of events	general	2,537,496	
	array	2,537,496	
	calorimeter	612,246	
	grande	367,192	
	lopes	770	
Zip-file name / size	KASCADE_HighEnergyData_runs_0877-7417_HDF5.zip / 159 MB		
Data file name / size	events.h5	/ 210 MB	
Creation date	4.5.2020		
Application	Analyses with high energetic particles		

KASCADE quantities selected

Quantity	Description	Range	Cut
E	Estimated primary energy	$10^{15.7} - 10^{19}$ eV	cut
Xc	X-core position	-91 - +91 m	full range
Yc	Y-core position	-91 - +91 m	full range
Ze	Zenith angle	0° - 60°	full range
Az	Azimuth angle	0° - 360°	full range
Ne	Number of e/ γ particles	100 - 500,000,000	full range
Nmu	Number of Muons	100 - 50,000,000	full range
Age	Shower age	0.1 – 1.48	full range

CALORIMETER quantities selected

Quantity	Description	Range	Cut
Nhad	Number of Hadrons	0 – 511	full range
Ehad	Energy sum of Nhad Hadrons	0, $10^{10} - 10^{16}$ eV	full range

GRANDE quantities selected

Quantity	Description	Range	Cut
Xc	X-core position Grande	-500 - +100 m	full range
Yc	Y-core position Grande	-600 - + 100 m	full range
Ze	Zenith angle Grande	0° - 40°	full range
Az	Azimuth angle Grande	0° - 360°	full range
Nch	Number of charged particles Grande	11111 - 1,000,000,000	full range
Nmu	Number of Muons Grande	1500 - 100,000,000	full range
Age	Shower age Grande	-0.385 – +1.488	full range

GENERAL quantities selected

Quantity	Description	Range	Cut
T	Air temperature	-20 ° - +50°	full range
P	Air pressure	960 -1040 hPa	full range
Gt	Global time (sec's since 1.1.1970)	894,638,100 – 1,358,239,243	full range
Mt	Micro time	0 – 999,999,999	full range
DateTime	Date & Time	8.5.1998–15.1.2013	full range
R	Run number	877 – 7417	full range
Ev	Event number	1 – 4,100,000	full range

LOPES quantities selected

Quantity	Description	Range	Cut
EfieldAbyMax	maximum atmospheric electric field	0.0 – 50000.0	full range
AzL_EW _NS	azimuth of LOPES CC beam; EW & NS	0.0 – 360.0°	full range
EIL_EW & _NS	elevation of CC beam; EW & NS	40 – 90°	full range
CCheight_EW & _NS	amplitude of CC beam; EW & NS	0.0 - 20.0 $\mu\text{V/m/MHz}$	full range
Xheight_EW & _NS	amplitude of X-beam; EW & NS	0.0 - 20.0 $\mu\text{V/m/MHz}$	full range
coneAngle_EW & _NS	cone angle of wavefront; EW & NS	0.0 - 0.1 rad	full range
NCCbeanAntennas_EW & _NS	nr of antennas contributing; EW & NS	0 – 30	full range
eta_EW & _NS	slope parameter of LDF; EW & NS	-0.04 - 0.11 1/m	full range
eps_EW & _NS	amplitude parameter of LDF; EW & NS	0.0 - 100.0 $\mu\text{V/m/MHz}$	full range
rmsCCbeam_EW & _NS	RMS of CC beam; EW & NS	0.0 - 20.0 $\mu\text{V/m/MHz}$	full range
Geomagnetic_Angle	angle between geomagnetic field and KASCADE shower axis	0.0 - 120.0°	full range
Geomagnetic_AngleG	angle between geomagnetic field and GRANDE shower axis	0.0 - 120.0°	full range
reconstruction	LOPRES reconstruction done with 'A' or 'G'	65 or 71	full range
LopesCompID	LOPES identifier	0 to 1	cut