Containers for Corsika on DIRAC

Luigi Antonio Fusco
CPPM, Marseille
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Outline

- 2 main line for development:
    1. **Script-based job management with pre-built containers**
    2. DIRAC-integrated GUI for container creation and job management

LF, Cristiano Bozza, Daniel Nieto

https://gitlab.in2p3.fr/escape-corsika/demo-containers-for-corsika/

escape-corsika › Demo containers for CORSIKA › **Repository**

dirac_dev | demo-containers-for-corsika / + | History | Find file | Web IDE | Clone

test LFS add for corsika6.simg.tar
Luigi Antonio Fusco authored 10 hours ago

5989ace3

Name	Last commit	Last update
build_images	Fixing typo	2 months ago
dirac	corrected typo in corsika.py	1 week ago
prebuilt_images	test LFS add for corsika6.simg.tar	10 hours ago
.gitattributes	test LFS add for corsika1.simg.tar via shell	1 day ago
.gitignore	Adding .gitignore	7 months ago
README	Initial commit	9 months ago

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test LFS add for corsika6.simg.tar
Luigi Antonio Fusco authored 10 hours ago — 5989ace3

Name	Last commit	Last update
..		
build1.tar LFS	Testing LFS on *.tar	7 months ago
build10.tar LFS	Adding remining docker images	7 months ago
build11.tar LFS	Adding remining docker images	7 months ago
build12.tar LFS	Adding remining docker images	7 months ago
build13.tar LFS	Adding remining docker images	7 months ago
build14.tar LFS	Adding remining docker images	7 months ago
build15.tar LFS	Adding remining docker images	7 months ago
build16.tar LFS	Adding remining docker images	7 months ago
build17.tar LFS	Adding remining docker images	7 months ago

~20 pre-built containers

WebGUI used for building docker and singularity

Run the docker DIRAC client (diracgrid/client:egi) binding the cloned git repo

python job launcher

corsika.py $CONTAINER_ID $CORSIKA_RUN_INPUT

corsika.py -h returns the help, with the ID description

```
[root@4bf9adf8d6b2 dirac]# python corsika.py -h
usage: corsika.py -c <corsika_container> -i <corsika_inputs>
corsika containers are available with the following CORSIKA compilation options:

ContainerID: 1;   AO: [], DG: 1 - horizontal flat detector array , EHIM: 2 - EPOS LHC , LEHIM: 3 - URQMD 1.3cr

ContainerID: 2;   AO: [1a - Cherenkov version, 1 - Photons counted only in the step where emitted , 1 - Emission angle is wavelength independent ], DG: 1 - horizontal flat detector array , EHIM: 2 - EPOS
LHC , LEHIM: 3 - URQMD 1.3cr

ContainerID: 3;   AO: [1d - Auger Cherenkov longitudinal distribution], DG: 1 - horizontal flat detector array , EHIM: 2 - EPOS LHC , LEHIM: 3 - URQMD 1.3cr

ContainerID: 4;   AO: [], DG: 1 - horizontal flat detector array , EHIM: 1 - DPMJET-III (2017.1) with PHOJET 1.20.0, LEHIM: 3 - URQMD 1.3cr

ContainerID: 5;   AO: [4a - NUPRIM primary neutrino version with HERWIG], DG: 1 - horizontal flat detector array , EHIM: 2 - EPOS LHC , LEHIM: 3 - URQMD 1.3cr

ContainerID: 6;   AO: [], DG: 1 - horizontal flat detector array , EHIM: 3 - NEXUS 3.97, LEHIM: 3 - URQMD 1.3cr

ContainerID: 7;   AO: [7b - UPWARD particles version], DG: 1 - horizontal flat detector array , EHIM: 2 - EPOS LHC , LEHIM: 3 - URQMD 1.3cr

ContainerID: 10;   AO: [7a - CURVED atmosphere version], DG: 1 - horizontal flat detector array , EHIM: 2 - EPOS LHC , LEHIM: 3 - URQMD 1.3cr

ContainerID: 11;   AO: [1a - Cherenkov version, 3 - No Cherenkov light distribution at all, 1 - Emission angle is wavelength independent ], DG: 1 - horizontal flat detector array , EHIM: 2 - EPOS LHC , LE
HIM: 3 - URQMD 1.3cr

ContainerID: 12;   AO: [1e - TRAJECTory version to follow motion of source on the sky], DG: 1 - horizontal flat detector array , EHIM: 2 - EPOS LHC , LEHIM: 3 - URQMD 1.3cr
```

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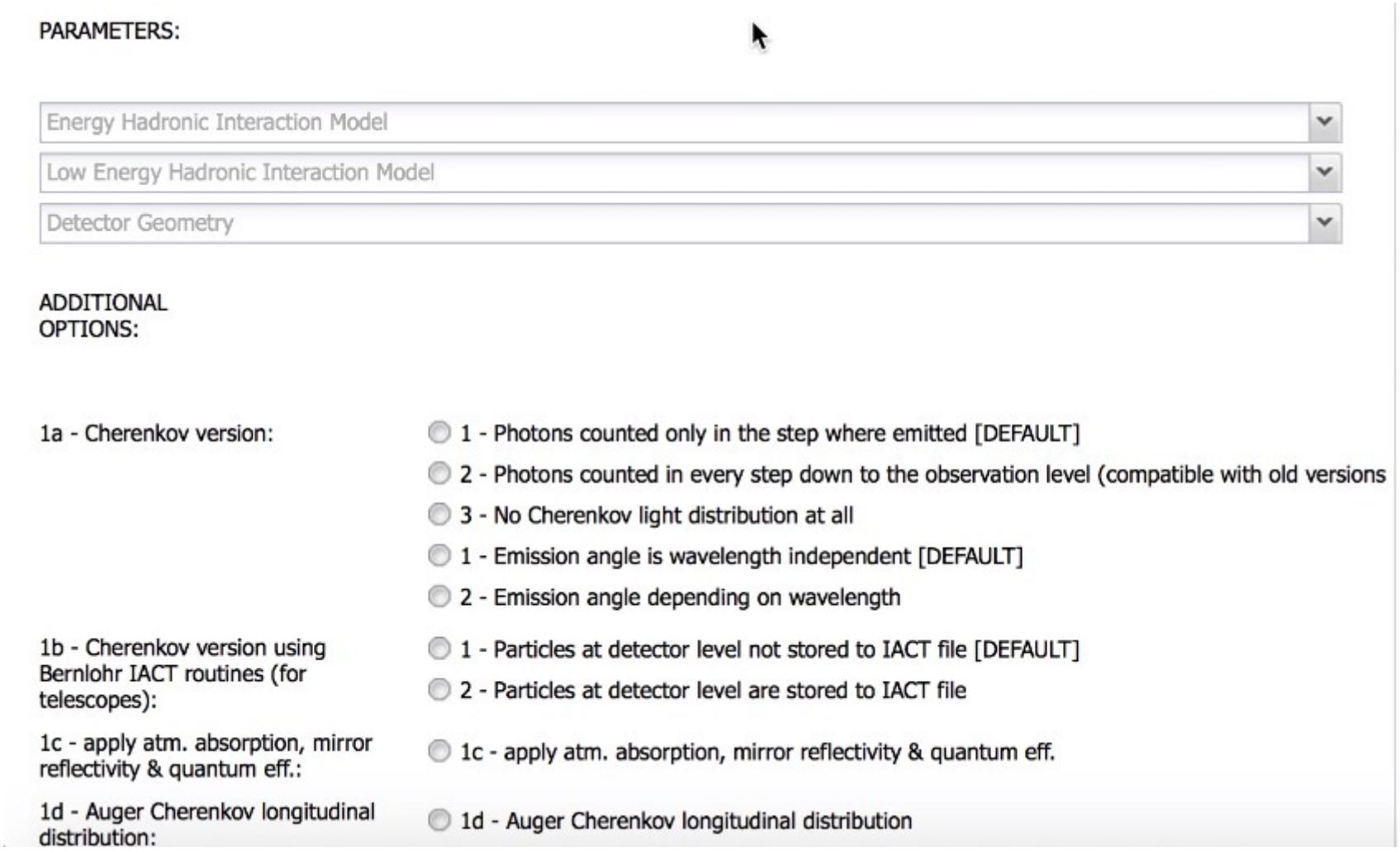
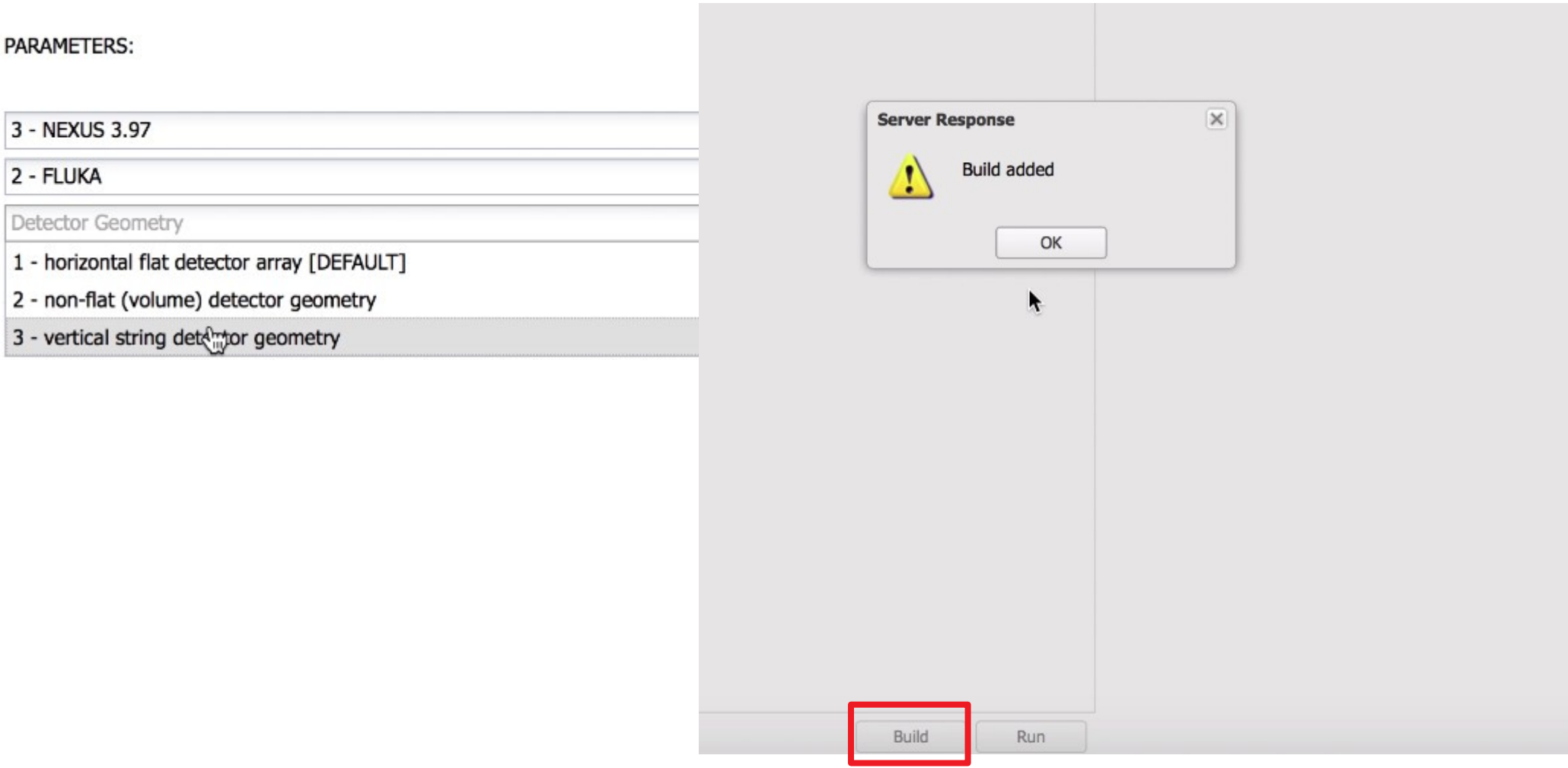
Web GUI for container generation

LF, Daniele Zito



Web GUI for container generation



Web GUI for container generation

INPUT:

RUNNR - RUN NUMBER:	1
EVTNR - NUMBER OF FIRST SHOWER EVENT:	1
NSHOW - NUMBER OF SHOWERS TO GENERAT:	1
PRMPAR - PARTICLE TYPE OF PRIM. PARTICLE:	14
ESLOPE - SLOPE OF PRIMARY ENERGY SPECTRUM:	-2.7
ERANGE_MIN - ENERGY RANGE OF PRIMARY PARTICLE (MIN):	1.e+5
ERANGE_MAX - ENERGY RANGE OF PRIMARY PARTICLE (MAX):	1.e+5
THETAP_A - RANGE OF ZENITH ANGLE (DEGREE):	20
THETAP_B - RANGE OF ZENITH ANGLE (DEGREE):	20
PHIP_A - RANGE OF AZIMUTH ANGLE (DEGREE):	-180
PHIP_B - RANGE OF AZIMUTH ANGLE (DEGREE):	180
SEED1_A - SEED FOR 1. RANDOM NUMBER SEQUENCE:	1
SEED1_B - SEED FOR 1. RANDOM NUMBER SEQUENCE:	0
SEED1_C - SEED FOR 1. RANDOM NUMBER SEQUENCE:	0
SEED2_A - SEED FOR 2. RANDOM NUMBER SEQUENCE:	2
SEED2_B - SEED FOR 2. RANDOM NUMBER SEQUENCE:	0
SEED2_C - SEED FOR 2. RANDOM NUMBER SEQUENCE:	0
OBSLEV - OBSERVATION LEVEL (IN CM):	100.e+2