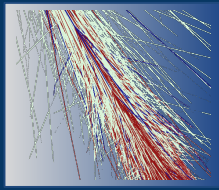
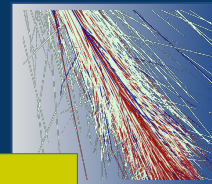


CORSIKA 8

Ralf Ulrich, 17.6.2021



- Welcome
- New contributors / collaborators
- ICRC
- Discussions



Recent work, Roadmap

- First e.m. physics
- Magnetic fields
- New structure, build system
- New dependency management
- Fast logging

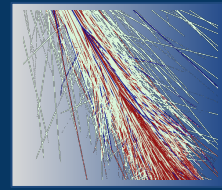
Slide from 11.2.2021
→ we are still on track

Today

- Output file generation
- Further work on e.m. / hadron / muon physics
- Radio emission
- Cherenkov emission
- Documentation

ICRC

First release (validation and testing)

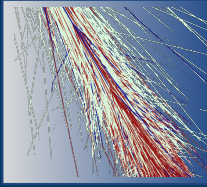


Next meetings

All meeting agendas collected at: <https://indico.scc.kit.edu/category/28/>

- Next general phone call:
 - Next week: June 24th ICRC results
 - July 22th (5 weeks) → OK?
- Next topical phone calls (Thursdays 2:30 CEST):
 - Parallelization, two week
 - E.M. showers, in three weeks
 - Open slot, in four weeks (discuss open MRs)
 - Radio , Fridays (9:30am CEST)

ICRC, Milestone



- Ideas, and todo:

1)EPOS

2)Marsian atmosphere

TODO

3)Hillas Splitting Algorithm

4)Random number library

TODO

5)Thinning

6)Fluka

7)Continuous Processes

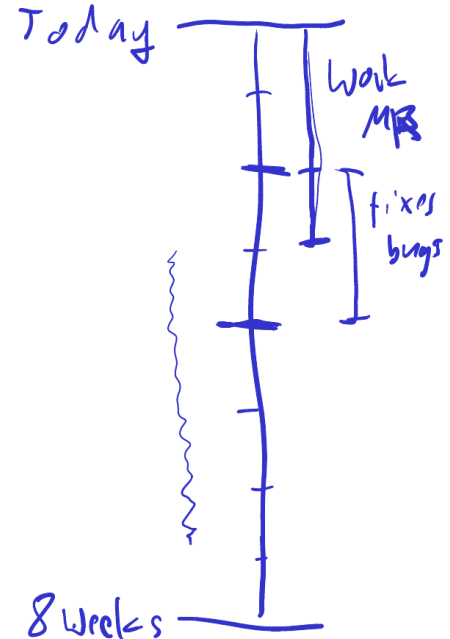
8)Further work on output

$N(x)$ maybe dE/dx
TODO 1st order

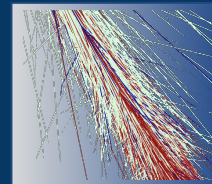
9)Further work on documentation

10)Keep examples more simple, reduce complexity

11)Create actual "corsika" executable, now called "vertical_EAS"

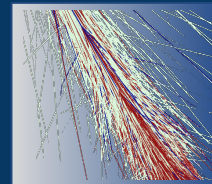


Finished work, recent



Resolve "libstdc++11 not available on MacOS" I377 · opened 5 days ago by Jean-Marco Alameddine · ICRC-2021 · Build System	MERGED · updated 22 hours ago · 4
Increased CONEX output precision I363 · opened 3 weeks ago by Maximilian Reininghaus · ICRC-2021	MERGED · Approved · updated 23 hours ago · 2
Remove setup from framework (followup) 7 of 8 tasks completed I362 · opened 3 weeks ago by Ralf Ulrich · ICRC-2021 · Development · Ready for code review	MERGED · updated 23 hours ago · 0
adding random_iterator I370 · opened 2 weeks ago by Antonio Augusto Alves Junior · ICRC-2021 · Comments requested · Important · Ready for code review	MERGED · Approved · updated 23 hours ago · 32
New documentation building I374 · opened 1 week ago by Antonio Augusto Alves Junior · ICRC-2021 · Build System · Documentation · Important	MERGED · Approved · updated 23 hours ago · 1
Resolve "CI jobs waste a ton of time re-generating proposal tables" I376 · opened 6 days ago by Ralf Ulrich · ICRC-2021 · Continuous Integration · EM · Ready for code review	MERGED · updated 23 hours ago · 1
Resolve "Trajectories crossing observation plane" I369 · opened 2 weeks ago by Ralf Ulrich · ICRC-2021 · Bug · Critical · Important · Ready for code review · Tracking	MERGED · updated 23 hours ago · 15
Enable multiple scattering in proposal I358 · opened 4 weeks ago by Jean-Marco Alameddine · ICRC-2021 · EM	MERGED · Approved · updated 6 days ago · 15
Resolve "EPOS is missing" I318 · opened 4 months ago by Ralf Ulrich · ICRC-2021 · Development · Feature request · Ready for code review	MERGED · 1 · updated 6 days ago · 56
Less verbose testing I373 · opened 1 week ago by Ralf Ulrich · ICRC-2021 · Continuous Integration · Ready for code review	MERGED · updated 1 week ago · 2
Added corsika/analysis python docker container I368 · opened 2 weeks ago by Ralf Ulrich · ICRC-2021 · Continuous Integration · Ready for code review	MERGED · updated 2 weeks ago · 1
Bump to proposal/7.0.5 I361 · opened 3 weeks ago by Jean-Marco Alameddine · ICRC-2021 · EM	MERGED · updated 2 weeks ago · 2
CI artifacts I367 · opened 2 weeks ago by Ralf Ulrich · ICRC-2021 · Continuous Integration	MERGED · updated 2 weeks ago · 0
fix problem with never-ending CI pipelines I366 · opened 2 weeks ago by Ralf Ulrich · ICRC-2021 · Continuous Integration	MERGED · Approved · updated 2 weeks ago · 0
Remove Setup and setup:: from framework I356 · opened 4 weeks ago by Remy Prechelt · ICRC-2021 · Comments requested · Ready for code review · Stack	MERGED · updated 2 weeks ago · 12

Relevant for ICRC



[WIP] Radio interface

!329 · opened 3 months ago by Nikos Karastathis ⌚ Radio Emission Discussion Feature request



updated 39 minutes ago

Resolve "Develop Cherenkov emission module" 8 of 8 tasks completed

!333 · opened 2 months ago by Matthieu Carrere ⌚ First full release: CORSIKA 8.0.0 Comments requested Development Discussion Ready for code review



updated 22 hours ago

Draft: Resolve "Need martian atmosphere model for ICRC"

!375 · opened 6 days ago by Ralf Ulrich ⌚ ICRC-2021 Development Discussion Feature request Important



updated 2 days ago

- Plan: let's make a release + tag on the ICRC milestone.
- Make two more tags, each on Cherenkov and Radio branches.
 - If possible: merge/rebase to master, OR make clear in talk
- Label all plots "CORSIKA 8 preliminary (ICRC2021)"

ICRC-2021

When we present CORSIKA8 at ICRC 2021 in a consistent way, we want to base all of this on a specific version/release/milestone of the framework. This Milestone here is a collection of changes/improvements/fixes we want to have included in this.



Improve milestones with Burndown Charts.

Burndown Charts are visual representations of the progress of completing a milestone. At a glance, you see the current state for the completion a given milestone. Without them, you would have to organize the data from the milestone and plot it yourself to have the same sense of progress. [Read more](#)

Start GitLab Ultimate trial

Issues 12 Merge Requests 41 Participants 4 Labels 13

Unstarted Issues (open and unassigned) 0

Ongoing Issues (open and assigned) 1

Need martian atmosphere model for ICRC

#435 Development Discussion Feature request Important

Completed Issues (closed) 11

Trajectories crossing observation plane

#427 Bug Critical Important Tracking

Bug in vertical_EAS - New outputs

#419 Bug

Sibyll pi0 decay produces a "NaN" pair of pi+/pi-?

#395 Bug Physics

CI jobs waste a ton of time re-generating proposal tables

#426 Continuous Integration EM

Add kinetic energy getter for particles

#405 Feature request

UrQMD cross-section regression

#403

Add optional "weight" for particles on stack (thinning)

#385 Development Feature request Important Stack

EPOS is missing

#381

Export cmake targets for CORSIKA8 as framework

#360 Build System Development

Tracking might use wrong ModelProperties

#359 Tracking

CorsikaFenvFallback

#352 Comments requested Development Important