ESSnuSB WP5
Orsay progresses since Zagreb

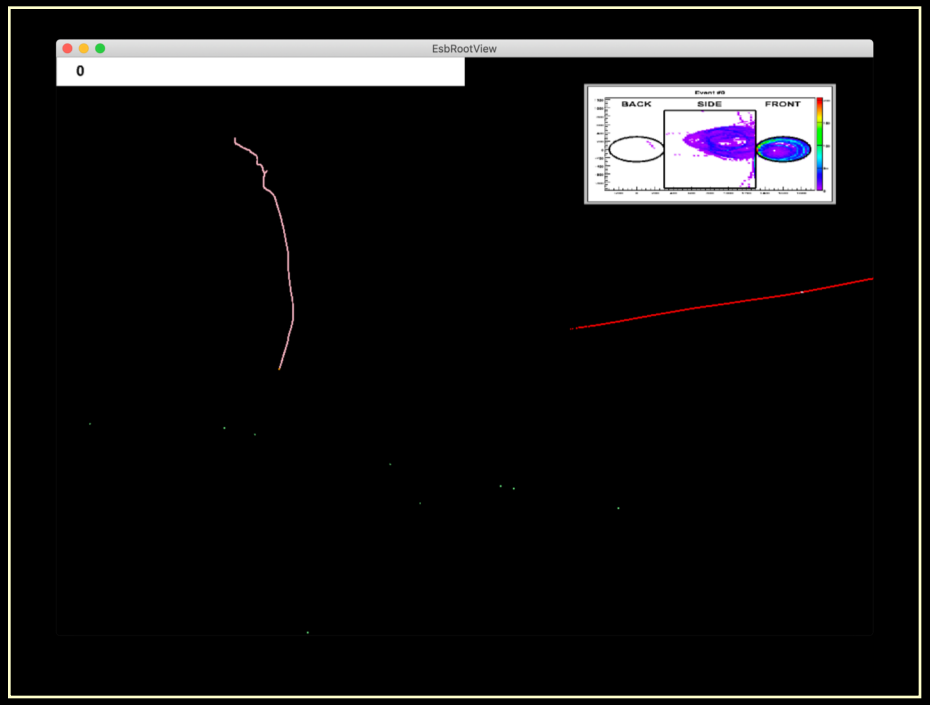
02 December 2019 video meeting

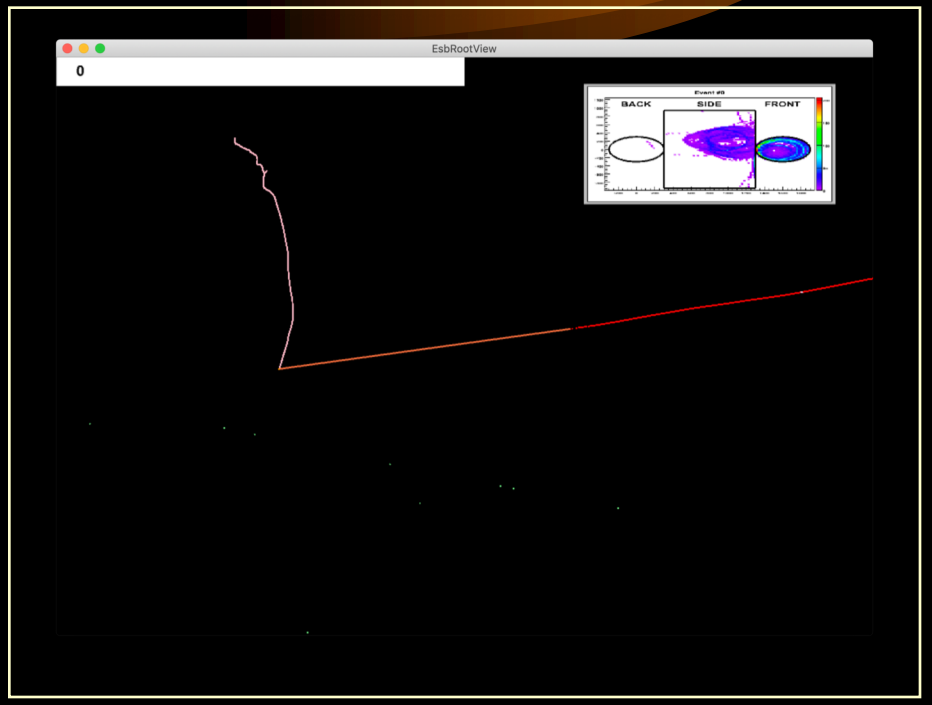
Guy Barrand, CNRS/IN2P3/LAL

Visualize last part of muon trajectory

- Request from Roumen : visualize muon trajectory whilst it does not emit Cherenkov light (last part of its trajectory).
- done by joining a line from « last Cherenkov MCTrack point being a secondary of the muon » to the « MCTrack of the muon neutrino ».

Visualize last part of muon trajectory





G.Barrand, CNRS/IN2P3/LAL

Else

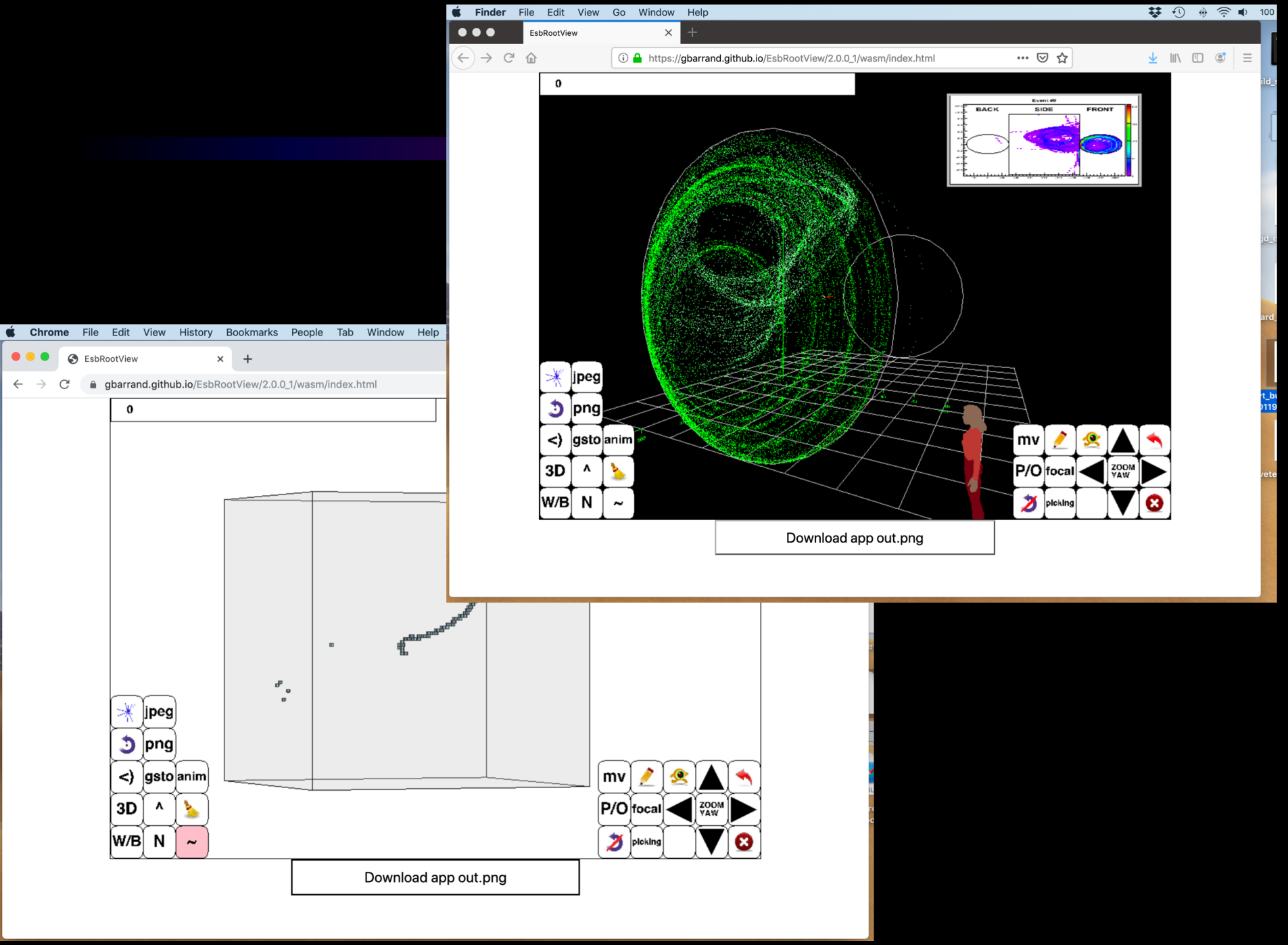
- Revisit the animation mechanism to be more effective for cone deployment
- More commands to customize plotting.
- All insh commands have now a help text.
- These can go in a 2.1.0 in December

WebAssembly ☺

- Hmmm, I have a first draft.
- The idea is nice :
  - Cross compile a « .wasm » version of EsbRootView by using a « emsdk » toolkit. (It uses LLVM and clang).
  - Deploy the binary .wasm file (along a index.html, and some .js files) in static web pages.
  - When loading the index.html from a browser, the .wasm is downloaded and executed in a browser local wasm virtual machine.
- There is a (poor) GL-ES implementation over WebGL in the emsdk toolkit. Then we can have 3D graphics.
- I can upload a desktop event file in the wasm !

WebAssembly ☹

- You can have a try from the gbarrand.github.io, under the EsbRootView section at the « wasm (experimental) » page.
- It works for me in:
  - Firexfox and Chrome on my Mac (Mojave)
  - Firefox on the euronunet vm
- But works badly on:
  - Safari (the app consumes too much memory for it).
  - All browsers on iOS and Android ☹ ☹ (black canvas here).
  - Firefox on Windows (points are not drawn !)
  - Chrome on Windows (it does not start; here too, we exceed browser limits).
- And in the GL-ES of emsdk:
  - glLight not implemented.
  - VBO (GPU usage) is bugged.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WebAssembly ☺☹

- Interesting technology. In particular the fact that we can deploy from « static pages » with no need of a particular server.
- Still a lot of problems around the graphics. (I have probably to do straight WebGL without passing by the emsdk/GL-ES. I know that straight WebGL works in all browser, especially the iOS and Android ones).
- BUT: web browsers are clearly « thought » to run « little asynchronous taks », and are not thought to run some big synchronous program. They have mechanisms to block such tasks.
- My feeling is that wasm will be ok for deploying light version of EsbRootView dedicated to some very specific visualizations (for outreach or physics), but for the overall display, it is much better to target local versions of the program.
- Demo….