EsbRootView

27 January 2020 Madrid meeting

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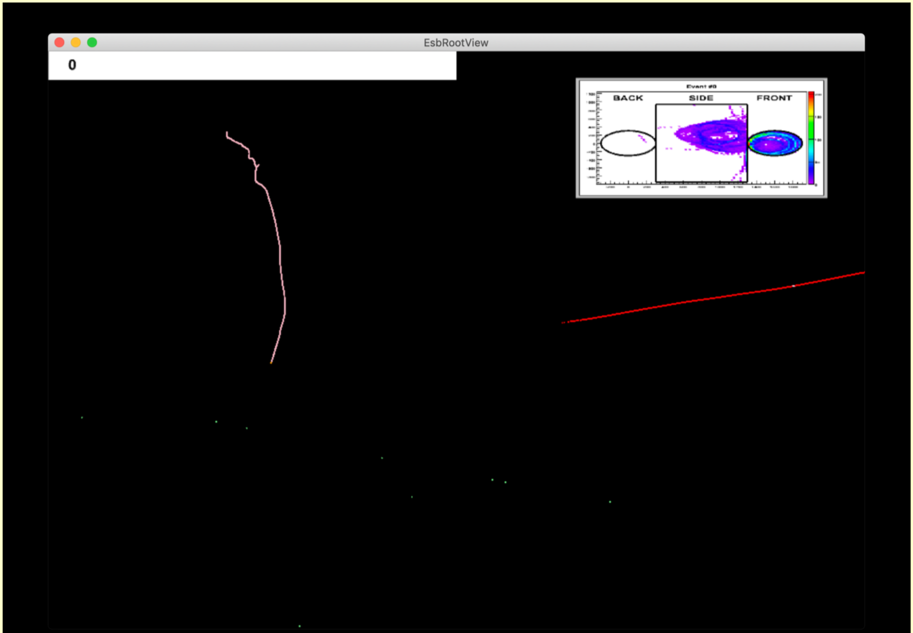
2.1.0

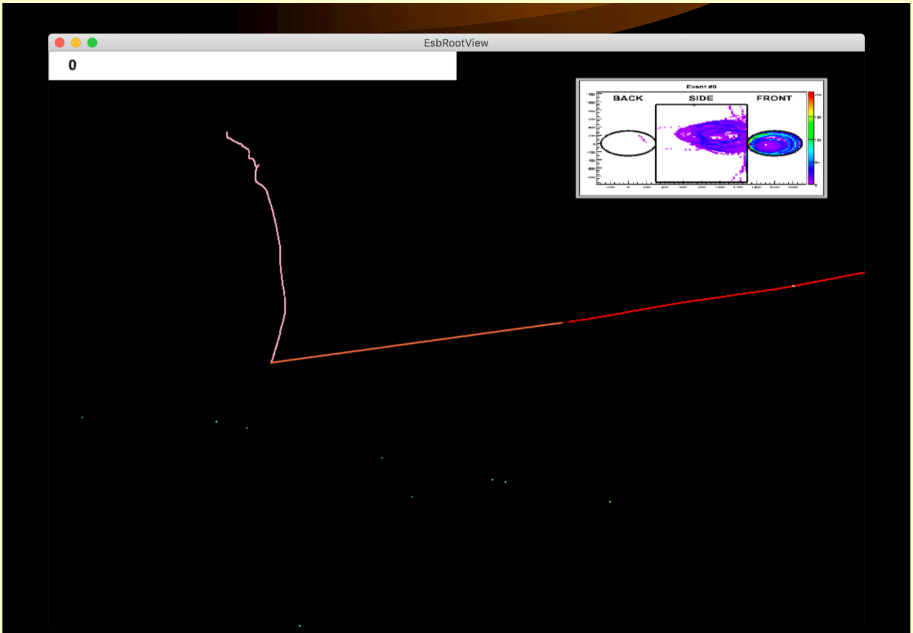
- 2.1.0 released last week.
- Revisit the animation mechanism to be more effective for cone deployment.
- Visualize last part of muon trajectory.
- More commands to customize plotting.
- All insh commands have now a help text.

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 ».

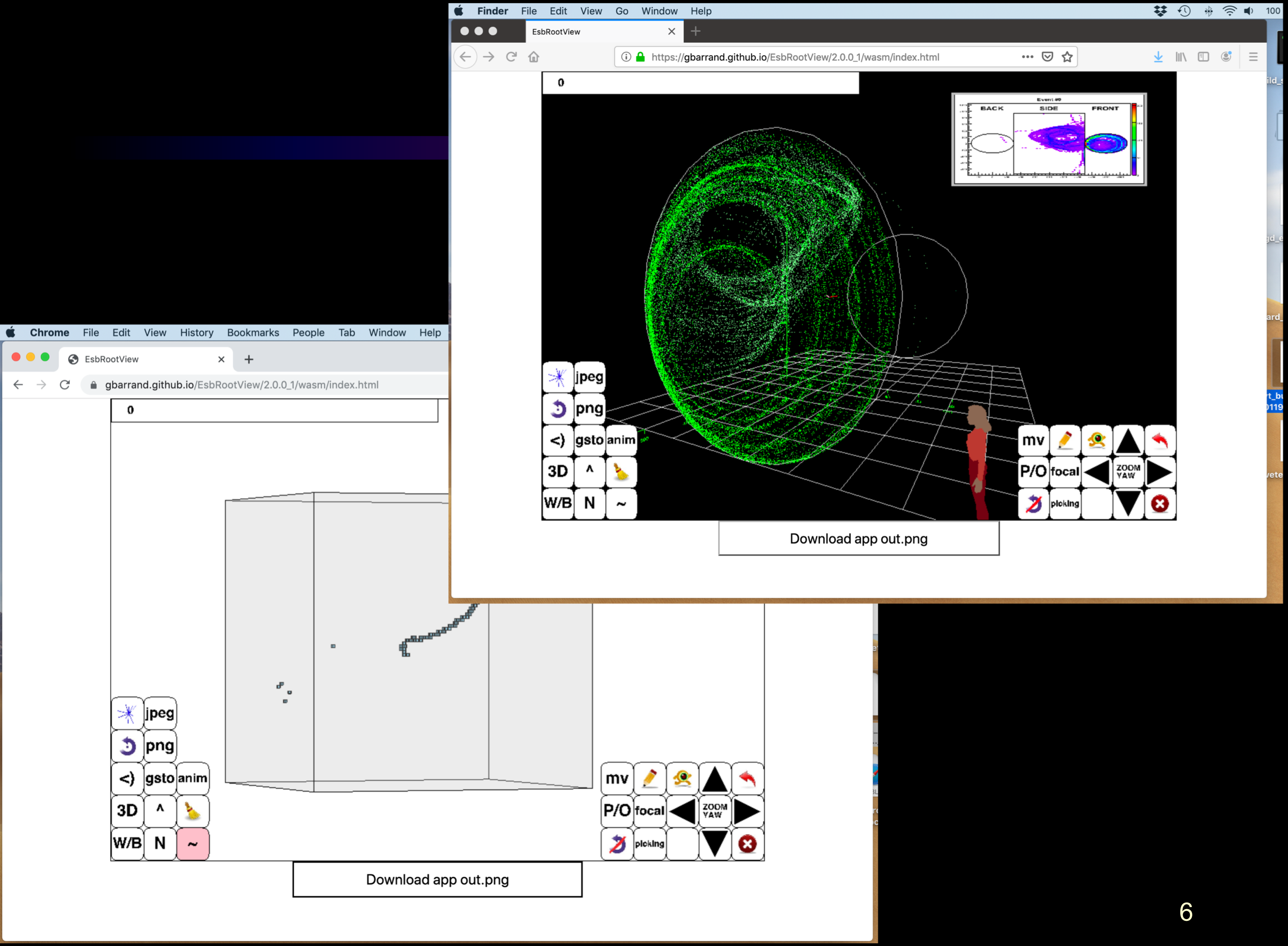
Visualize last part of muon trajectory





WebAssembly

- See my slides at last video meeting.
- A very promising first quantum of action permits to have the app working in some web browsers. (Firefox being the best for the moment).
- A second quantum of action is needed to be « pure WebGL » and then (I hope) be able to run on all web browsers, including the ones on iOS and Android.
- You can have a try (then with FireFox for the moment) at gbarrand.github.io, under the EsbRootView section at the « wasm (experimental) » page.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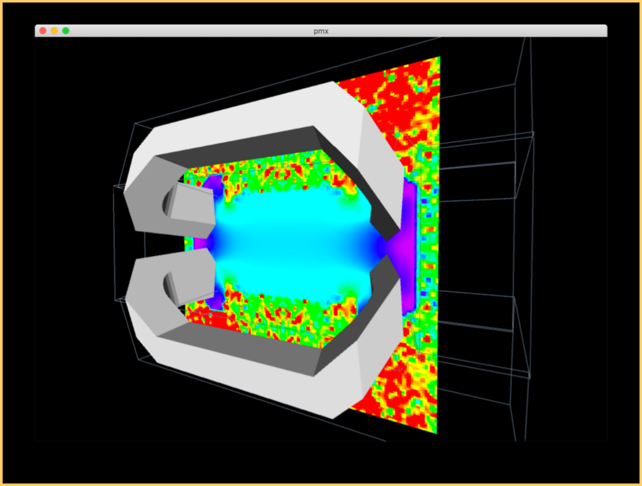
picking
Download app out.png

Next…

Physics :

- Visualize tracks in a mag field ? (I need data)
- (I have code to do the transport in a mag field).
- I have also « goodies » to visualize a mag field from a 3D map! (See the pmx app showing the mag field of LHCb).
- More event data model items ?
- Have more tutorial material in pages.



Engineering :

- WebAssembly : be pure WebGL.

IJCLab at Orsay

- CNRS/IN2P3 created a new big lab at Orsay joining the forces of the « previous » LAL, IPNO, CSNSM, IMNC, LPT : the IJCLab. (Existing now from first January. It gathers around 800 people!).
- IJCLab is for « Irène Joliot-Curie Laboratory ».
- As ESS was present in IPNO, it is then defacto present in IJCLab.
- And then my activity for EsbRootView is a little bit more legitimate now at Orsay...

Backup slides

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.

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….