$J/\psi \rightarrow e^+e^-$

Nathaly Santiesteban
September 10 /2021

- lAger generator:
  https://eicweb.phy.anl.gov/monte_carlo/lager/

  Follow: lager/examples/eic/25mrad
  jpsi-10on100.disp-jpsi-00-electron.json
  Formalism from Phys. Rev. D 94, 074001 (2016)

output hepMC

```
"type": "lager-vmp-25mrad",
"tag": "disp-jpsi-00-electron",
"run": "1",
"lumi": "1",
"info": "lumi in fb^-1",
"output_hepmc": "true",
"generator": {
    "type": "jpsi-10on100",
    "vertex": {
        "type": "origin"
    },
    "beam": {
        "lepton": {
            "type": "constant",
            "particle_type": "e-",
            "dir": [
                "0",
                "0",
                "-1"
            ],
            "energy": "10"
        },
        "ion": {
            "type": "constant",
            "particle_type": "proton",
            "dir": [
                "-0.02499739591",
                "0",
                "0.9996875163"
            ],
            "energy": "100"
        }
    },
    "target": {
        "type": "primary"
    },
```

- EIC Smear

  In the singularity container after loading the environment:

  echo 'BuildTree("file.hepmc")' | eic-smear

  Courtesy of Kolja Kauder and Sylvester Joosten

  Output: Root file compatible with fun4all

- fun4all

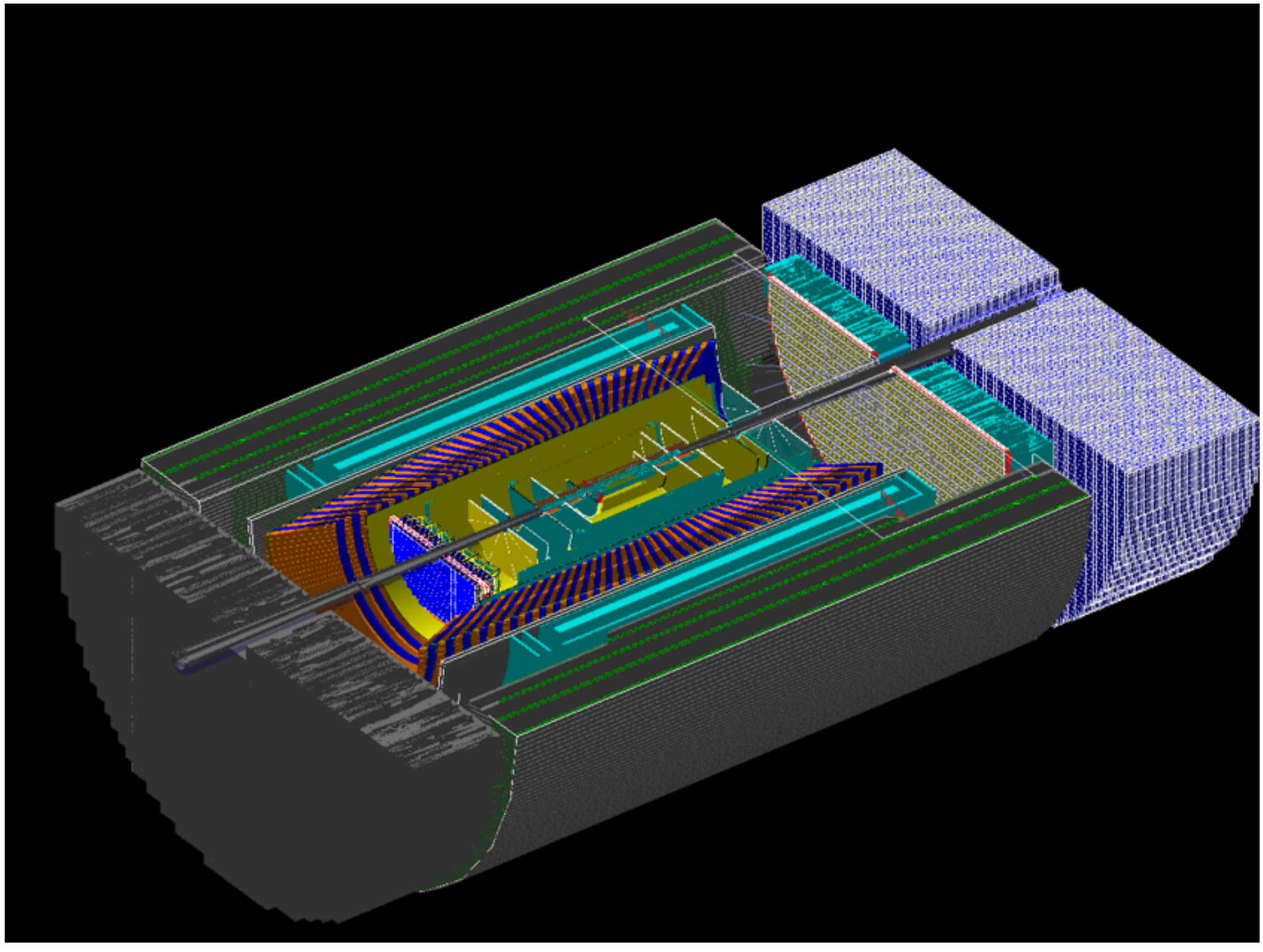
  *Enable eic-smear
    Input::READEIC = true

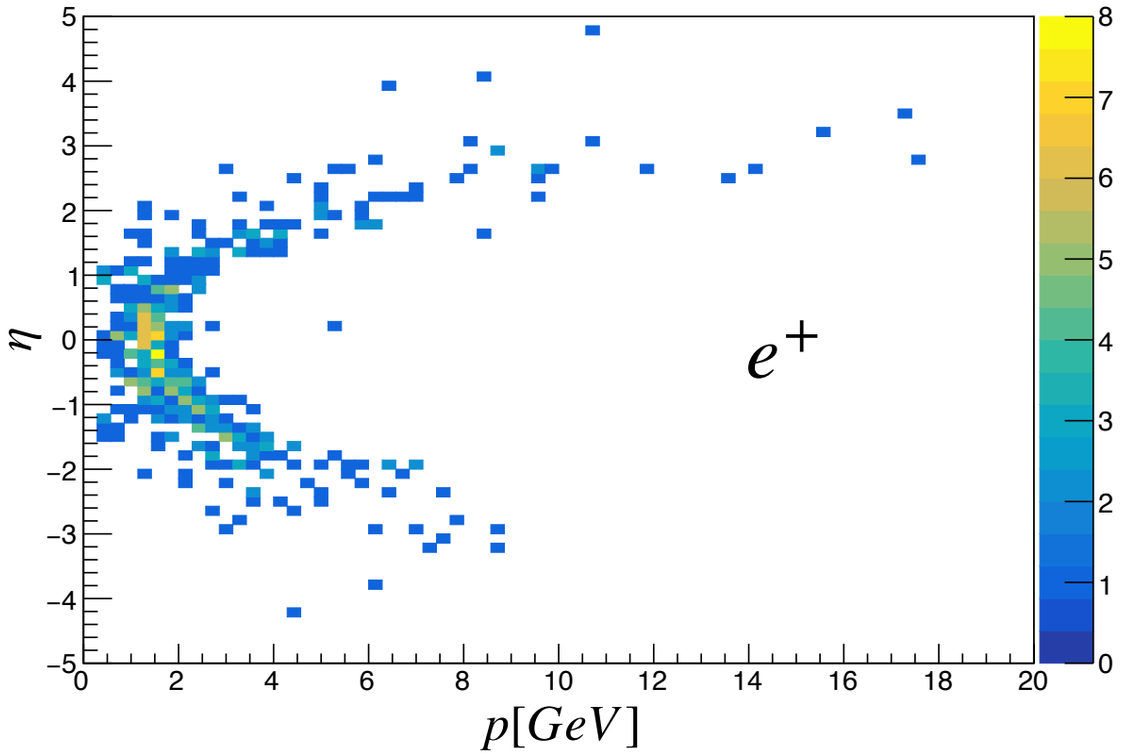
  * Unable Simple generator

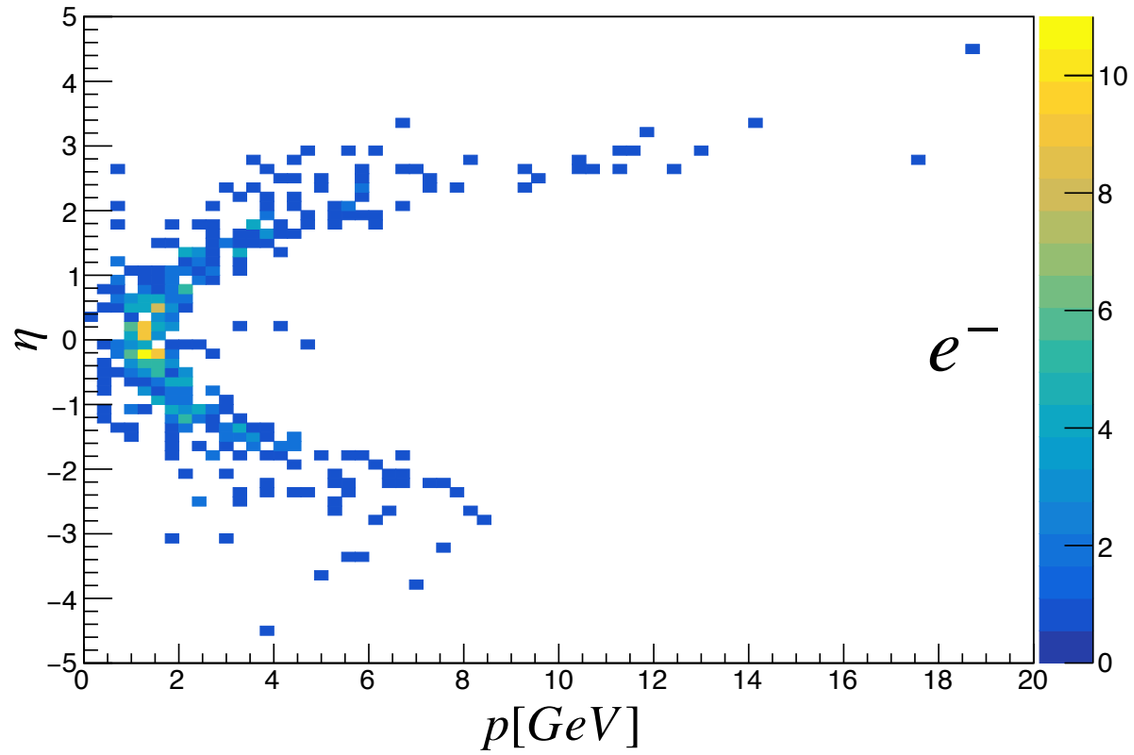
  * Root file is used as the inputFile

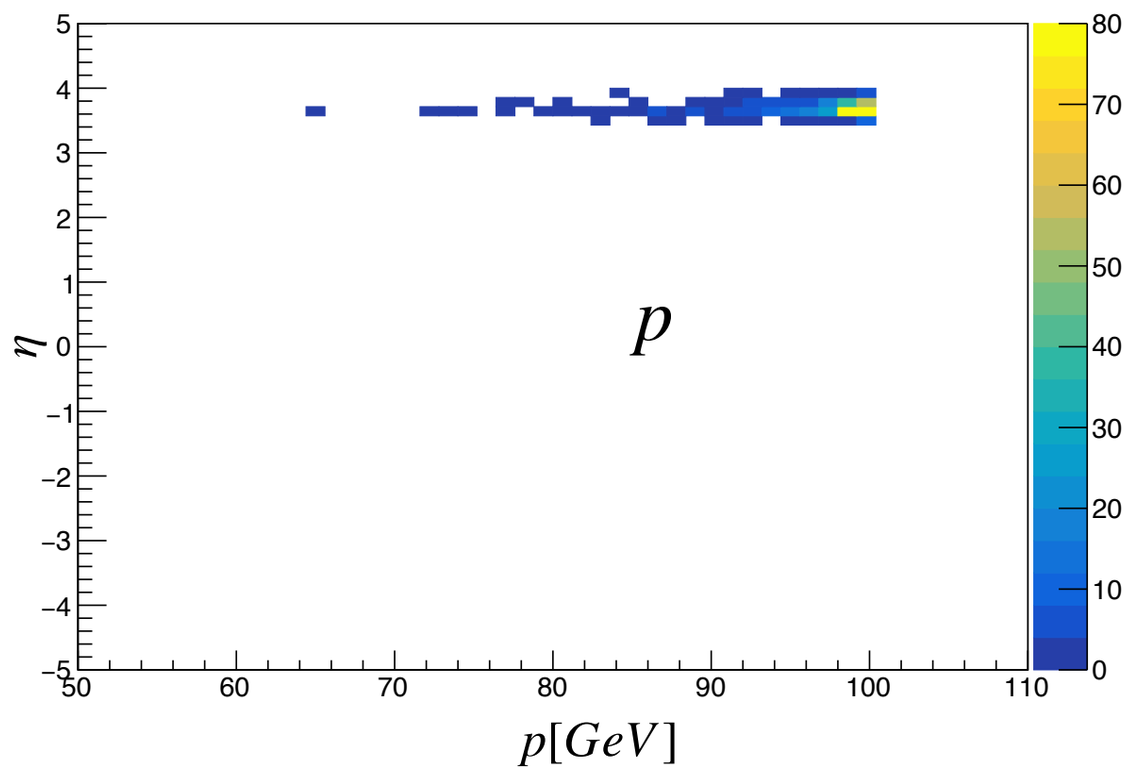
Current issue: Not Cross Section is saved in the hepMC or the root file.
Work in progress.

Using the July-2021 Concept
(as for yesterday a work in progress, today single particle production should start)




e^+
η
$p[GeV]$


e^-
η
$p[GeV]$


p
η
$p[GeV]$

BECAL Energy

$$-1.7 < \eta < 1.3$$