Delphes analysis strategy

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Introduction

- Most parts of the FCCSW are now ready and operational (see Joschka's talk)

- More and more users are now expressing interests in using the software for analysis

- We need detailed instructions/procedure on how to do so

- In this talk I will summarize the basic concepts that we need to follow

Physics events

- Backgrounds
  - Best to centrally produce events
  - New users should look at what is available and request more if needed
  - More interactions with physics groups needed
- Signal
  - Each user is in charge of producing their signal events
- Storage and database
  - eos storage available (20TB, used at 2% for the moment, mostly by myself…)
    - Will also need to share it between users and common, or request more DS
  - For the moment database is a simple python dictionary, nobody really working on a better solution…

Interface FCCSW/events

- Goal is to provide to the user a simple way of accessing and selecting the events
  - With some conventions to be decided
  - For example: I need all the backgrounds with gamma's and jets in the final states
- Everybody will use the same interface which ensure we use the same version of events
- Need a reliable database for events (both signal and backgrounds?) and a simple and easy way to access them

Analysis code

- Working on a simple analysis code example with Zbynek (double higgs production in bbγγ channel)
- Should contain the methods to access the events through the simple database and basics functionalities to
  - run over the events
  - Apply basic selection
  - Produce some plots

Use case

- I want to start an analysis within FCCSW
- Look at the events available
  - https://test-fcc.web.cern.ch/test-FCC/LHEevents.php
- Examine if something is missing, if yes request to be made (for the time being to me directly)
- Generate your signal and add it to the database
- Use the analysis example and adpat it to your taste

Some open questions

- Flexibility towards various parameterizations of Delphes
  - We can not support nor produce events for tens of configurations
  - We need clear guidelines for users