MC and Trigger Information in the PAT

Outline

- Preface

- Basic Concept

- Lecture

- Exercises:

  - Part 1
  - Part 2

- Material

Preface

- Topic name will change:
    - It is not only about matching, but about the complete information available in the PAT:

        "MC and Trigger Information in the PAT"

    - The matching remains the intersection, since the used matcher is identical, ...

    - … but not the match selector.

Basic Concept

- Lecture:
  - Data formats
  - Event contents
  - Configurations:
    - Python helpers

- Exercises:
  - Definition of wanted event content and according configuration
  - Matching configuration
  - Example analysis of trigger information

Lecture

- **Data formats and other classes:**

  - TriggerEvent, TriggerPath, TriggerFilter, TriggerObject(StandAlone)

  - TriggerHelper, TriggerMatcher, TriggerMatchEmbedder

  - GenParticle

- **Event contents:**

  - origin of information in RECO/AOD

  - data members of PATObject

  - additional products and their possible correlation

- **Configuration:**

  - Production

  - Matching

  - Embedding

Exercises Part 1

- **Configuration of MC information production:**
    - To get started with something easy
- **Configuration of trigger information production:**
    - Default
    - TriggerObjectStandAlone
- **Configuration of MC/trigger matching:**
    - Definition of wanted matches
    - Simple MC match
    - Simple trigger match
    - Embedding into PATObject

Exercises Part 2

- Example Analysis:
  - On trigger information
  - Possible topic:
    - Compare 4-vector b/w HLT and RECO objects
      - Production of trigger information
      - Trigger matching
      - Simple EDAnalyzer to access produced information

Material

- Software:
  - Should be ready for all participants
- Input data:
  - Default RECO/AOD, preferred: *ttBar*
- Paper copies:
  - Maybe for definitions in *DataFormats/HLTReco/interface/TriggerTypeDefs.h*