♔ Situation Now
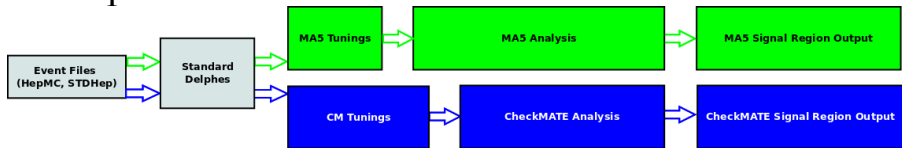
Facts

- We use individually tuned and extended Delphes versions
- The analyses use the form of these tunes and are hence not easily interchangable
- The output is pretty much the same (for each signal region / cutflow point the sum of weights and sum of weights squared)

♔ Proposal 1

Step 1

- We factor out all individual Delphes changes into a separate second step
- This way, both tools can read all Delphes files and Delphes updates are easy for both to embed
- Common Delphes output consists of smeared truth leptons, jets, truth b's, τ's and c's, filtered clusters, tracks
- Tunes then do the efficiencies, the isolations and the flavour tagging individually
- Might take some effort for all, but is most likely easier than requiring one (or both) to completely rewrite the whole analysis machinerie.

♚ Proposal 2
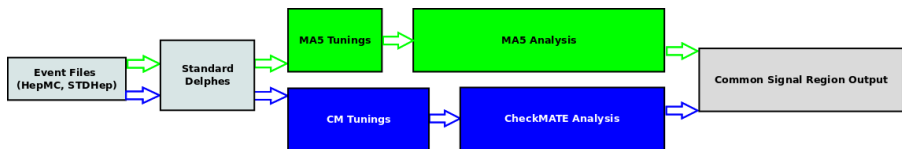
Step 2

- All tools agree on a common format for their analysis output
- This makes the exchange and the comparision of different tools easy
- Almost no extra work, since it is just a different layouting of the same information

♚ Proposal 3
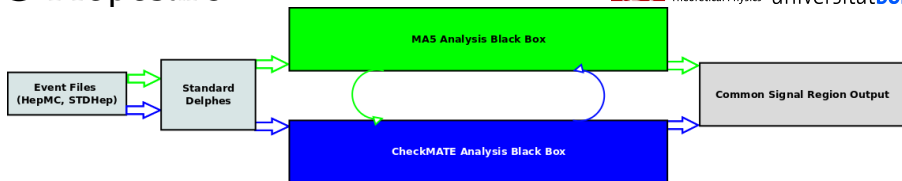
Step 3

- Both tools make it possible that everything from after Delphes until the signal region output can be used in a completely encapsuled way,
- Example:
    - 'python CheckMATEBox.py delphesoutput.root *analysisname*'
- If these encapsuled analysis objects can be used standalone, they are exchangable between the tools

Achievement

We would have found a possibility to exchange analyses between the two frameworks.

♚ Proposal 3
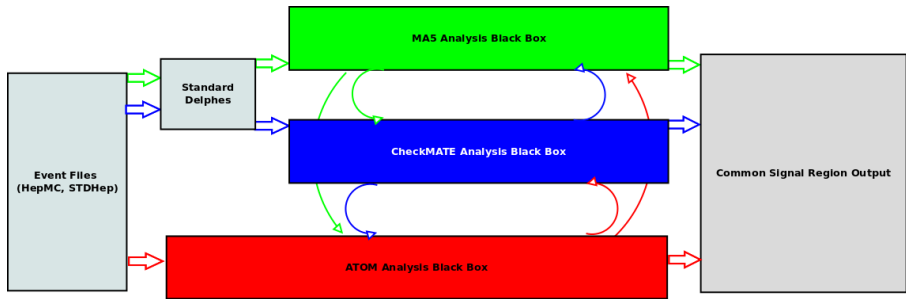
Step 3+

- A common signal region output would also be achievable by ATOM

Achievement

We would have found a possibility to exchange analyses between all three frameworks.

The following agreements would solve the job

- MA5 and CheckMATE agree on using the 'old' Delphes version and extract all their tunes into separate post-filter-programs
- ATOM, MA5 aqnd CheckMATE agree on a common format for the signal region output and make their tools able to read and write these
- MA5 and CheckMATE make it possible that everything from Delphes-Output to signal-region output can be run as a simple standalone code and make these standalone codes available (in some way)
- Same for ATOM, but encapsuling the event file to the signal region output