File names in TChain

Or how to solve ROOT-9344

G Ganis, 16 April 2018

The problem (see [ROOT-9344](#))

- TChain has problems with the following path structure

    /my/dir/path/dir.root/*filename-noext*

when *filename-noext* does not contain '.root'

- This is because of the trick to allow specifying the treename as

    /my/dir/path/filename/treename

in addition to   /my/dir/path/filename?#treename

- Finding triggered by an ATLAS observation w/ 6.10
    - Following fix for ROOT-8452

The reason

- Without '.root' (or any other distinct 'trigger') there is no way to distinguish between

  /my/dir/path/file.root/treename

  and

  /my/dir/path/dir.root/filename-noext

- In the second case, ROOT will look for a TTree 'filename-noext' into the file /my/dir/path/dir.root
  - Both the file name and the TTree name are good names, but none of them exists

Possible solutions

- Make the '.root' extension mandatory
  - Now it is only advised (see [11.1.1 in the User's guide](#))

  > The first four bytes of the file header contain the string "root" which identifies a file as a ROOT file. Because of this identifier, ROOT is not dependent on the " `.root` " extension. It is still a good idea to use the extension, just for us to recognize them easier. The `nfree` and

  - Backward compatible, but a sort of limitation

- Force TTree name specification via the URL tags '?#'
  - Cleaner solution
  - But backward incompatible