Outlook for Math Work package

- Remove duplication of Math functionality and full integration of *MathCore* in other ROOT libraries
  - base there the Math functionality of ROOT
- Develop advanced statistical tools for analysis in the LHC environment
  - advanced fitting and minimization tools
    - add global minimization methods (like genetic algorithms)
    - add constraint optimization
  - multivariate analysis techniques
- very good to receive contributions like *RooFit* or *TMVA*
  - important to focus on the needed functionality and trying to avoid duplications (potential problem of maintenance in the long term)
- need to strength contacts and collaboration with the experiments
- Focus on parallelism (multi-CPU mode running)
  - example: parallel minimizations
- Progress in the design and developments of GUI for configuring and running the advanced Math tools (fitting, MVA, etc..)

General Outlook for ROOT

  📖 Revisit concept of Histograms (it is an old concept)

  📖 Think more in term of data-sets and their graphics representations

     📖 Data sets and their statistical tools to analyze it

       📖 simple data sets (counts, X-Y data, etc..)

         📖 binning performed only when needed (for very large data sets)

       📖 more sophisticated ones (like trees)

       📖 statistical tools that operate on the data sets

     📖 graphics representation (plotting)

       📖 one could easy change from one to the other (whenever possible) using the same data set

  📖 Continue development of more sophisticated GUI

     📖 provide easy customizations by the users and developers of additional packages

  📖 Focus more on Python for scripting and compilation on the fly with automatic dictionary generation

     📖 should decrease role of CINT as a C/C++ parser

     📖 my personal opinion is that CINT as a parser is too weak and usage should not be encouraged in the long-term.

General Outlook for ROOT (2)

- Concentrate on improve modularity of the system
  - have a minimal core system
  - loading on demand of all the extra module needed
- Improve documentation and Web site
  - we have so much good documentation in the source files
  - we should base on something like Doxygen for generating the reference documentation
  - improve user guide and provide it in HTML format
- Next years the priority is to focus on the needs of the LHC experiments
  - provide more consultancy and tutorials to the experiments
- We should also think for the long term future (not only LHC)
  - important maintaining good collaboration with other research labs, also outside HEP
  - more collaboration with private sector
    - good opportunity for getting financial resources