



Contribution ID: 16

Type: **Parallel Talk**

## Application of the rule-growing algorithm RIPPER to particle physics analysis

*Wednesday, November 5, 2008 5:25 PM (25 minutes)*

A large hadron machine like the LHC with its high track multiplicities always asks for powerful tools that drastically reduce the large background while selecting signal events efficiently. Actually such tools are widely needed and used in all parts of particle physics. Regarding the huge amount of data that will be produced at the LHC, the process of training as well as the process of applying these tools to data, must be time efficient. Such tools can be multi-variate analysis – also called data mining – tools. In this talk we present the results for the application of the multi-variate analysis, rule growing algorithm RIPPER on a problem of particle selection. Minimum-bias Monte-Carlo data for the LHCb-Experiment are used. It turns out that the meta-methods bagging and cost-sensitivity are essential for the quality of the outcome. The results are compared to other multi-variate analysis techniques as well as to the traditional cuts based method.

**Authors:** Dr BRITSCH, Markward (Max-Planck-Institut fuer Kernphysik (MPI)-Unknown-Unknown); Prof. SCHMELLING, Michael (Max-Planck-Institut fuer Kernphysik (MPI)); Prof. GAGUNASHVILI, Nikolai (University of Akureyri)

**Presenter:** Dr BRITSCH, Markward (Max-Planck-Institut fuer Kernphysik (MPI)-Unknown-Unknown)

**Session Classification:** Data Analysis - Algorithms and Tools

**Track Classification:** 2. Data Analysis