The Proceedings of the BOOST 2015 Conference: A Review of Jet Substructure at the Start of LHC Run 2

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Abstract: Is very abstract

1 Introduction

2 Jet Tagging and Resonance Searches

- What taggers have already been commissioned and what is the theoretical understanding of their behavior?
- What are the differences between the ATLAS and CMS tagging approaches?
- What updates, changes, and additions are necessary for Run 2?
- What should be the ultimate goal for W/Z tagging in the long term?
- What are the results of resonance searches incorporating these taggers?

3 Other Searches With Substructure

- What other searches have been performed outside of the typical domain of W/Z/H/t resonances?
  - SUSY Searches (multijet RPV/RPC, stop)
  - VLQ searches
- What are the prospects for searches with jet substructure in Run 2?

4 Progress in Analytical Calculations

- What is the status and recent theoretical progress in analytic calculations for substructure?
- What has already been done and compared to data?
- What is now available for comparison to data but has yet to be compared?
- What still needs to be calculated and what are the wishes for experimental measurements?

5 Experimental Measurements

- What measurements have been performed already?
  - Cross-section measumements ($d\sigma/dm$)
  - Boosted cross-section measurments ($t\bar{t}$)
  - SM properties (pull, charge)
- What measurements are being planned for Run 2?
- What measurements are missing and should be performed?

6 Prospects for Super Boosted Objects

- What observables do we know have problems as a function of pT?
  - Issues related to granularity?
- What observables are roughly scale independent?
- What studies have already been done and what performance assessments can be made?
  - Various approaches (Sergei, Gilad, etc.)
- What lessons have been learned about detector requirements?
- What studies are still missing and how can detector simulation be used or incorporated?
  - What should the FCC study groups focus on?

7 Conclusion

8 Acknowledgements