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Physics Analysis Tools for Beauty Physics in ATLAS

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The LHC experiments will search for physics phenomena beyond the Standard Model (BSM). Highly sensitive tests of beauty hadrons will represent an alternative approach to this research. The analyzes of complex decay chains of beauty hadrons will require involving several nodes, and detector tracks made by these reactions must be extracted efficiently from other events to make sufficiently precise measurements. This places severe demands on the software used to analyze the B-physics data. The ATLAS B-physics group has written series of tools and algorithms for performing these tasks, to be run within the ATLAS offline software framework ATHENA. The presentation will describe this analysis suite, paying particular attention to mechanisms for handling combinatorics, interfaces to secondary vertex fitting packages, B-flavour tagging tools and finally Monte Carlo truth association to pursue simulation data in process of the software validations which is important part of the development of the Physics Analysis tools.

Submitted on behalf of Collaboration (ex, BaBar, ATLAS)

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