ATHENA: common ATLAS computing framework for Monte Carlo simulation, Data and Monte Carlo reconstruction and physics analysis

**ATLAS described in XML**

- **barrel structures**
- **endcap structures**

**XML input**
- independent language to describe all kinds of shapes (extendable to anybody’s needs)
- visual debugging reduces development duty cycles
- intuitive interpretation of the code due to direct correspondence of XML elements to shapes and detector elements
- input for generic visualisation and simulation applications

**XML parser**
- interface with minimal interpretation of elements
- various open source solutions available (e.g. TinyXML, Xerces, ...)

**Atlas Generic Detector Description**
- generic geometry model based on volumes (solids equipped with material properties) and positions is built inside memory
- parser from generic representation to arbitrary visitor program (e.g. TGeo, Geant4, GeoModel, ...) or file outstream
- extensible for new XML elements thanks to modular programming techniques
- configuration via python scripts (common for ATLAS software framework)
- resources are saved if several visitors are required by the end user

**Example (GeoModel)**
- common geometry description used in ATLAS software

**Example (Geant4)**
- accurate simulation software

**Example (Persint)**
- fast tracking and detector simulation

**Example (ASCII code)**

**Example (Persint)**

**ATLAS Collaboration**
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