



# Updates - 30/01/23

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Cauê Evangelista

Sprace

□ Done:

- MECÂNICA QUÂNTICA I
- MECÂNICA QUÂNTICA II
- ELETRODINÂMICA CLÁSSICA I
- TEORIA QUÂNTICA DE CAMPOS I
- FÍSICA DE PARTÍCULAS ELEMENTARES I
- TÓPICOS DE FÍSICA I - MÉTODOS ESTATÍSTICOS EM FÍSICA EXPERIMENTAL

□ To be done:

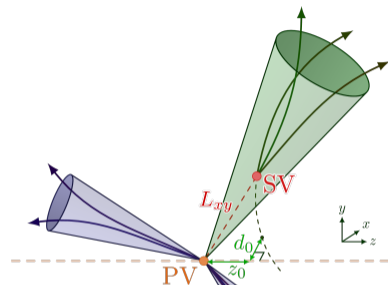
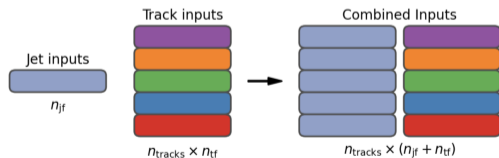
- MECÂNICA ESTATÍSTICA I
- ESTÁGIO DOCENTE SUPERVISIONADO I

## Next Steps - Events and Jet Clustering

- Events Array: Numpy → Awkward(eliminate zero padding)
  - [Awkward](#): Awkward Array is a library for nested, variable-sized data, including an arbitrary-length lists.
- Jet Clustering: use FastJet from Scikit-HEP to perform Clustering
  - [Scikit-HEP](#): is a project with the aim of providing the HEP community with an ecosystem for data analysis in Python.
  - [FastJet](#): is a software package for jet finding in pp and  $e^+e^-$  collisions. This version includes bindings to Python and Awkward Array.

# Next Steps - Tracks

- Just Particle Cloud it's not enough!
- How to simulate Tracks alongside with Jets?
- Which features are available to us? <sup>1</sup>



<sup>1</sup>Atlas Collaboration. "Graph Neural Network Jet Flavour Tagging with the ATLAS Detector", 2022.