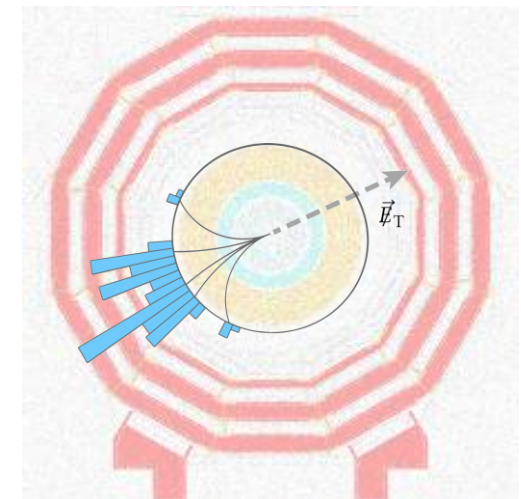
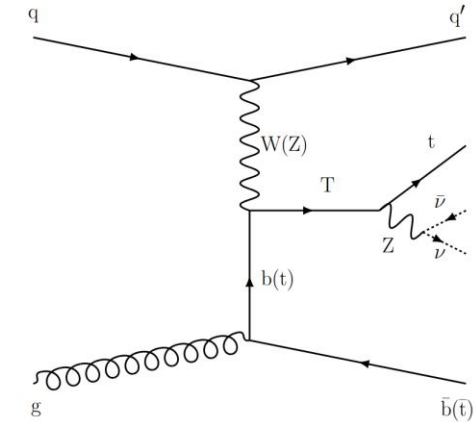


# Tutorial VLQ T search with RDF

- Early Run-III analysis (2022-2023 data taking)
- BSM searches : Vector-Like Quark T in  $T \rightarrow tZ$  channel
- Final state: hadronic Top quark and Z ( $\nu\nu$ )
- In the tutorial we will implement a simplified version of the analysis using RDataFrame



# Tutorial VLQ T search with RDF

- [GitHub repo](#)
- The input files are stored on a Tier-2 and are central NanoAOD with minor differences. The most relevant for the tutorial are,
  - Added PU reweighting
  - Added JES and JER
- The framework is a simplified version made specifically for the tutorial
  - It includes the preselection, the event selection based on fully-merged Top quark (reconstructed by a single AK8 jet) and the definition of a Signal Region and a Validation Region
  - Additionally, we will see also how to apply systematic variation