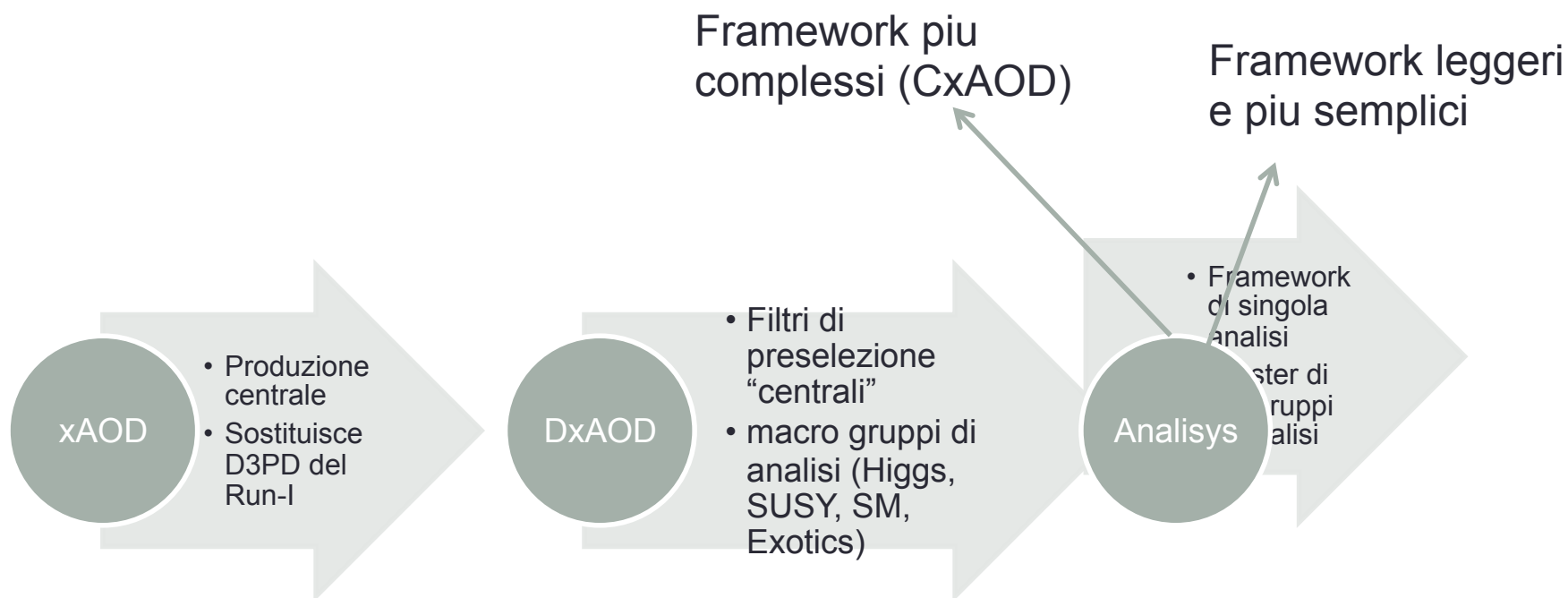


REPORT ANALISI

Francesco Conventi

Modello di analisi Run-II



Tool online ricerca dei campioni DxAOD MC/data:

<http://atlasui02.na.infn.it:8088/~sanchez/ATLAS/monitor/filterdxaodextended.html>

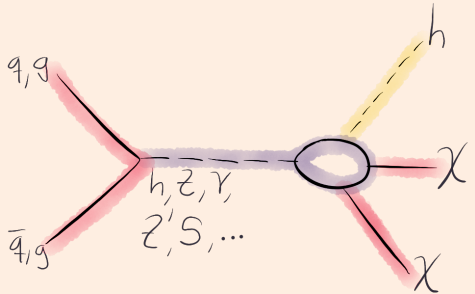
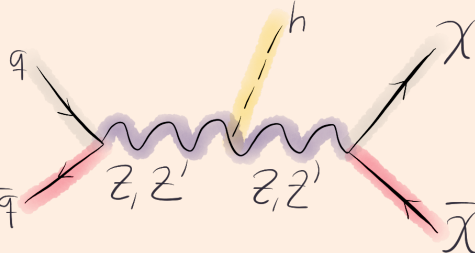
Analisi in corso per il Run-II

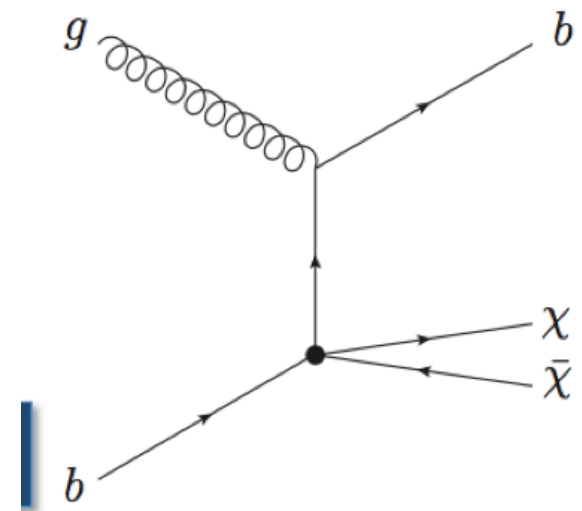
- Ricerca di fisica oltre il Modello Standard:
- MonoX: monoH, mono(b)jet **NA+RM+HARVARD**
- H BSM: High mass Higgs (2jets + leptoni)

MonoX

N. Whallon's talk, 16/12/14: indico.cern.ch/event/351524/
Models based on arxiv.org/pdf/1312.2592v2.pdf

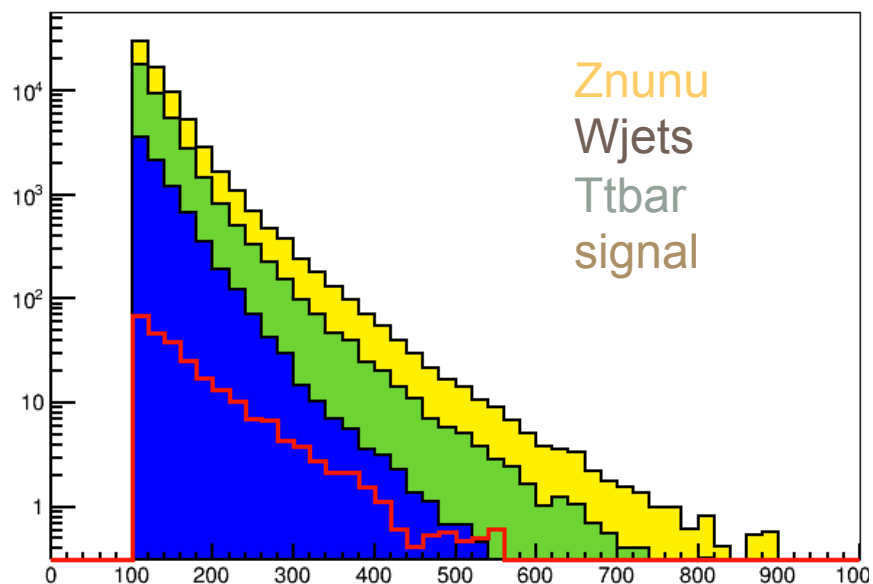
- Ricerche BSM model $\sim$ independent (SUSY, DM, ED)

Mono-H models	Motivation
 A Feynman diagram showing a quark q and antiquark $\bar{q}$ (red lines) annihilating into a Higgs boson h (yellow dashed line) and a pair of dark matter particles χ (black lines). The annihilation occurs via a loop of particles labeled $h, z, \gamma, z', S, \dots$ (purple wavy lines). The Higgs boson is shown as a dashed line, and the dark matter particles are shown as solid lines.	EFT modelling coupling 4-point coupling $HZ\chi\chi$ and $H\gamma^*\chi\chi/HZ\chi\chi$
 A Feynman diagram showing a quark q and antiquark $\bar{q}$ (red lines) annihilating into a Higgs boson h (yellow dashed line) and a pair of dark matter particles χ and $\bar{\chi}$ (black lines). The annihilation occurs via a loop of particles labeled z, z' (purple wavy lines). The Higgs boson is shown as a dashed line, and the dark matter particles are shown as solid lines.	Simplified model for the production of WIMP with a Higgs final state

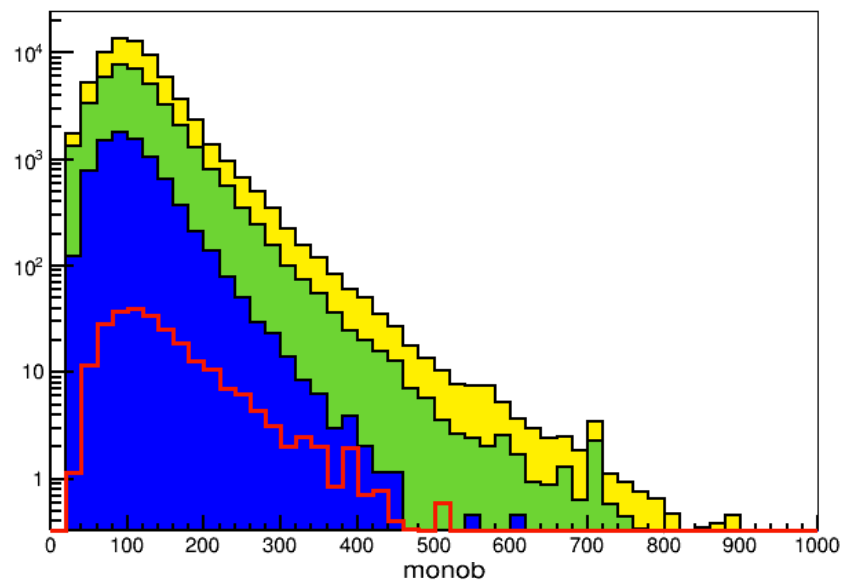


MonoX

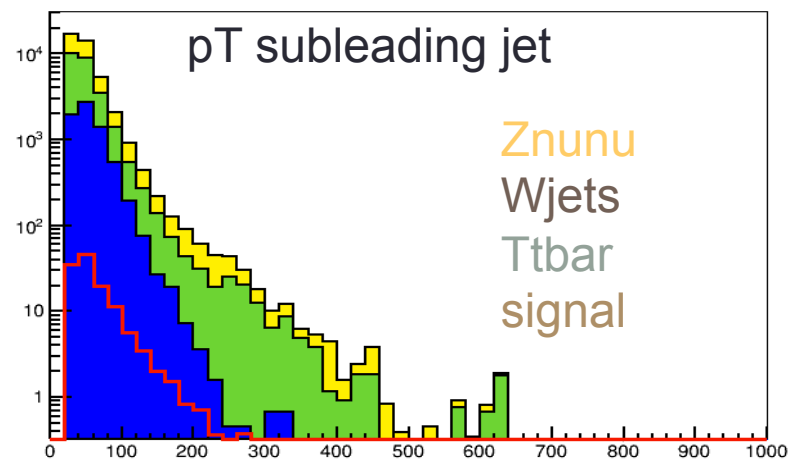
MET monob



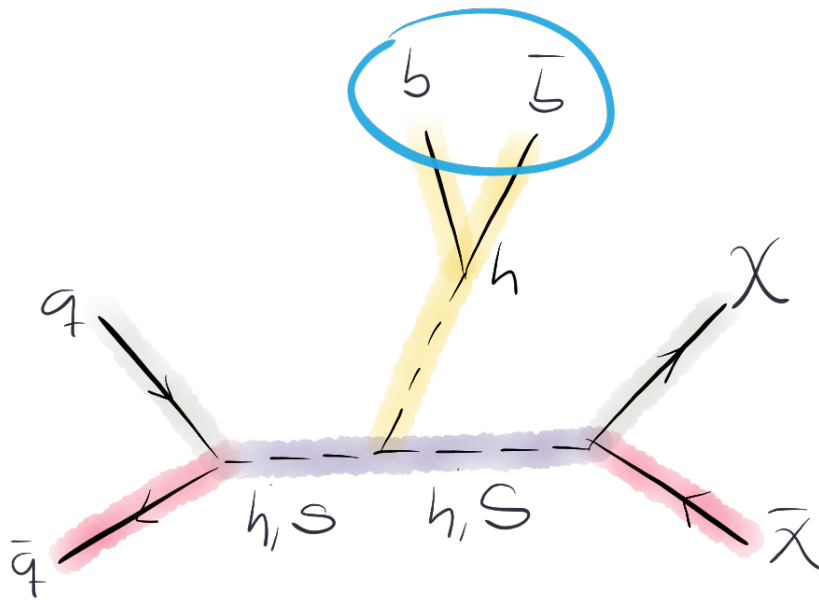
pT leading jet monob



pT subleading jet



MonoH



Signature: MET + jets

Analysis splitted for **resolved** (MET < 500 GeV) and **boosted** channel (MET > 500 GeV)

Background:

Zvv, W+jets, tt, SM H (H->bb, WH, ZH)

CDS links of the Run-I support note:

- Resolved:

<https://cds.cern.ch/record/1977384>

- Boost:

<https://cds.cern.ch/record/2008236>