

CBG CMS — Lithuania

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Current Status

Status: Analysis

Currently working on

$t\bar{t}H, H \rightarrow b\bar{b}$

- Trigger SFs
- Reducible $t\bar{t}b\bar{b}$ as CR/separate analysis
- Kinematic reconstruction
- MEM + kinematic reconstruction

$t\bar{t}H, H \rightarrow \tau\bar{\tau}$ and multileptons

- $\tau\text{-}\bar{\tau}$ polarization

Drell-Yan

- Background studies

Status: Computing & Software

Currently working on

- Moving to nanoAOD for analysis FW
- Machine-learning-based data certification
- Continuous integration for analysis

Past Expertise

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In the past we have worked on

- DY differential measurements
- Higgs properties via MEM, including phenomenology
- Two Higgs doublet models — not yet in analysis
- Electron scale factors
- Online DAQ
- Usual CMS SW
- VU had Tier-3 (expertise still there?)

Thoughts on Future

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In the Baltics, we could establish

- 1–2 common physics analyses ($t\bar{t}X$, ...)
- Common analysis framework \Rightarrow framework for science
 - Start by conglomerating tools
- Riga&Vilnius learn from Tallinn T2 \Rightarrow consortium?
- Make Baltic&Friends pool of topics for students
 - CPU Support for CUDA
 - Declarative analysis
 - Other HSF topics

Have a detailed proposal next time?