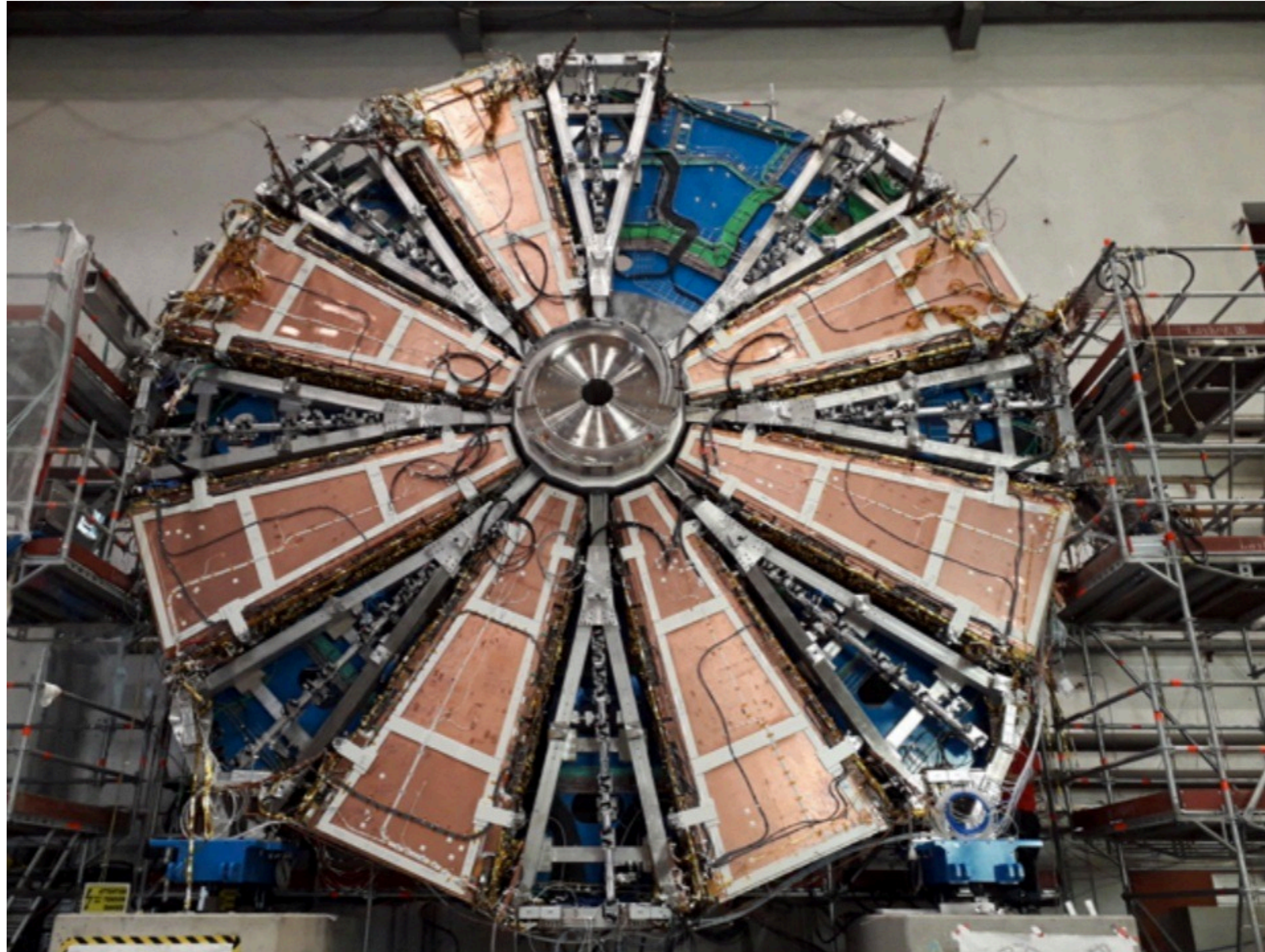


HEP Experiment @ Weizmann

- Main Joint Activity: **ATLAS** Endcap Muon trigger (New Small Wheel)



ATLAS Weizmann

- PIs (see next slide)

- Scientists:

- Lorne Levinson (Trigger DAQ Leader)
- Ilia Rabinovich (Detector Development)
- Vladimir Smakhtin (Detector Development)



- Detector Lab (Mexico)
Production and R&D Lab

- Meir Shoa (Lab Manager)



- Boris Yankovsky (Engineer)



- Fredy Balacsan & Gil Cohen (Principal Technicians)

HEP Experiment @ Weizmann

- Experiments: ATLAS, LUXE, CEPC
- Joint Activities:
 - Chambers & Electronics for the **ATLAS** Endcap Muon trigger

- Pls:

Ehud Duchovni (CERN Contact, GRID Coordinator)



Shikma Bressler (Head of Group, ATLAS Israel Hardware Coordinator)



Noam Tal Hod (sTGC @ NSW Project Coordinator)



Eilam Gross (Israel RECFA representative)



Noam Tal Hod Group



Tomas Jakoubek
PostDoc



Arka Santra
PostDoc



Sanjay Mathai
MSc
(w/ GP)



Dvij Mankad
MSc



Noam Tal Hod Research

- **LUXE physics**

LUXE is a new experiment at the XFEL facility in DESY Hamburg where high-energy electron beam will be collided with high-intensity laser pulses. LUXE will reach and even pass the Schwinger limit. See talk by Arka

LOI: arXiv:1909.00860 [physics.ins-det]

CDR in preparation for Jan 2021

- responsible for the design and construction of LUXE's Pixel Tracking detector
- leading the design, simulation and analysis of the experiment in the context of its CDR
- driving together with Gilad P. and Yotam S. (TIT) the BSM analysis (ALPs, mCPs,...)

- **Detector Development:**

A new lab (just finished construction recently) for the development of solid-state detector technologies.

Now focused on LUXE's tracker design and operation using the ALPIDE pixel (MAPS) chips.

In the near future: collaborate on the ALPIDE next generation R&D project(s) like MALTA and beyond.

- **Data analysis and performance in ATLAS:**

First measurement of $R(K^*)$ in ATLAS including related work on the trigger system. See talk by Tomas

In preparation

Search for resonances and non-resonant phenomena in high-mass dilepton final states, including work on exclusive final states $Z'(\rightarrow \ell\ell) + bb/E_T^{\text{miss}}/VBFjj$ and worm on semi-periodic clockwork-like signals. See talk by Arka

Phys. Lett. B 796 (2019) 68,

JHEP 11 (2020) 05

Shikma Bressler Group



Abhik Jash
PostDoc



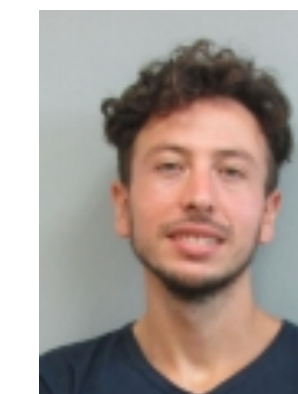
Mattias Birman
PhD



Dan Shaked
Renous
PhD



Andrea Tesi
PhD



Darin Zavazieva
PhD



Federico De Vito
MSc
(w/ YN)



Gal Sela
MSc



Sergey Volkovich



Yuval Zach



Shikma Bressler Research

- **Detector Development:**

Novel radiation detection concepts based on MPGD

Recent pubs: Nucl.Instrum.Meth. A916 (2019)

(Micro Pattern Gas Detectors) technologies

R&D for particle flow calorimetry in future accelerator experiments

recent pubs: Nucl.Instrum.Meth.A 958 (2020)

Development of light and charge readout concept in cryogenic systems

(Andrea Tesi)

recent pubs: JINST 15 (2020) 04, C04002 | JINST 14 (2019) no.11, P11021

- **Data Analysis:**

Search for lepton flavour violation decays of massive particles (Mattias Birman)

Related pubs: Eur. Phys. J. C 77 (2017) 70

Methodologies for data-directed searches &

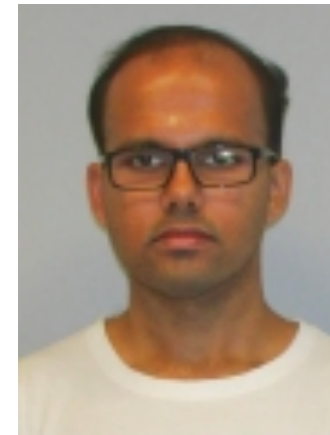
Data-directed searches for e/mu asymmetry as a probe for BSM physics

Publication in preparation

Eilam Gross Group



Sanmay Ganguly
PostDoc



Jonathan Shlomi
PhD



Anna Ivina
PhD



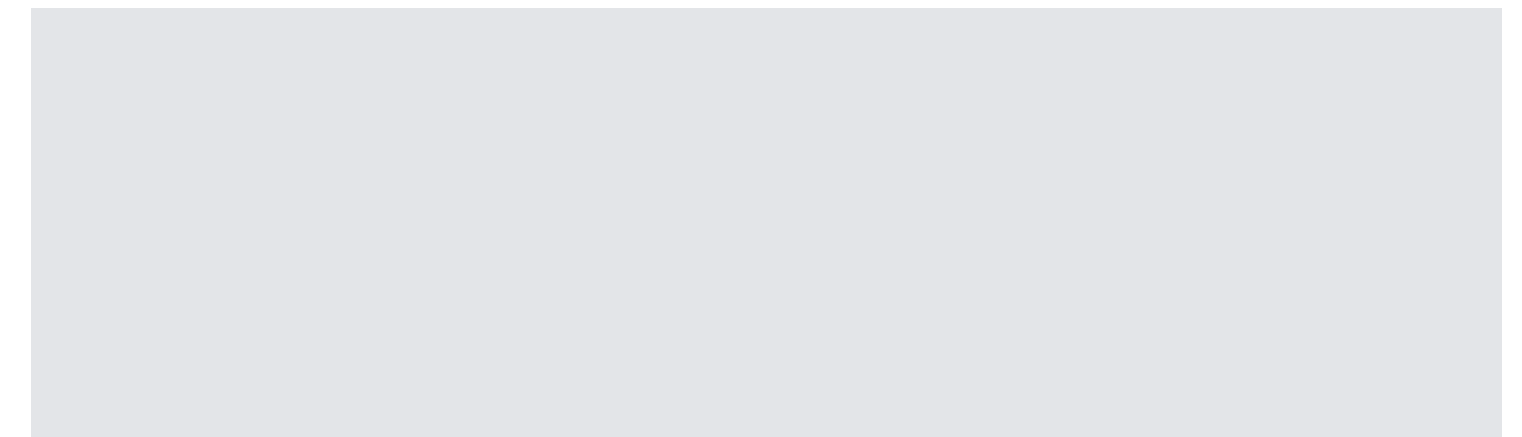
Nilotpal Kakati
PhD



Anton Charkin-
Gorbulin
MSc



Dimitry
Kobylianskii
MSc



Eilam Gross Group Research

- Main theme: development of DL tools and applications for HEP
 - Towards a Computer Vision Particle Flow
arXiv:2003.08863 . accepted for publication in EPJC, March 2020
(Sanmay Ganguly)
 - Set2Graph: Learning Graphs From Sets
arXiv:2002.08772 accepted to NeurIPS 2020, December 2020
Secondary Vertex Finding in Jets with Neural Networks
arXiv:2008.02831, accepted for publication in EPJC, August 2020
(Jonathan Shlomi)
 - Efficiency Parameterization with Neural Networks
arXiv:2004.02665, , Submitted to Computing and Software for Big Science, Springer, April 2020
- Analysis: $pp \rightarrow Hc$ & $VH \rightarrow Vcc$ to measure Charm Higgs coupling
Search for the Decay of the Higgs Boson to Charm Quarks with the ATLAS Experiment.
Phys.Rev.Lett. 120 (2018) no.21, 211802