

Michelangelo Mangano

PhD:

Pisa SNS SUSY and SUGRA phenomenology

Research fellowships:

- Princeton (84-86): strings model building, vertex ops, index theorems
- Fermilab (86-88): from strings to QCD amplitudes

Staff:

- Pisa (88-95): moving to the dark side, CDF experiment at Tevatron
- CERN TH (since 1995): physics at LEP, Tevatron, LHC

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Main research interest: *collider physics, in all of its aspects, as a tool to explore known and unknown.*

- SM dynamics in all regimes (large Q^2 , proton structure and soft phenomena, spectroscopy, heavy ions, ...)
- Heavy quarks and flavour phenomena
- Higgs physics and BSM searches
- Impact beyond colliders

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Focus:

- **Maximize the physics output the LHC**
 - *explore and exploit potential of precision (exp and TH)*
 - *expose new opportunities*
- **Promote future colliders**
 - *underscore uniqueness of colliders to explore the Higgs properties & the origin of EWSB*

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The key open question:

- *how to build a convincing case of discovery from the detection of dynamical anomalies in the data, in a context where TH systematics and biases abound (reliance on PDFs, impact of higher orders, non-PT modeling, ...)*

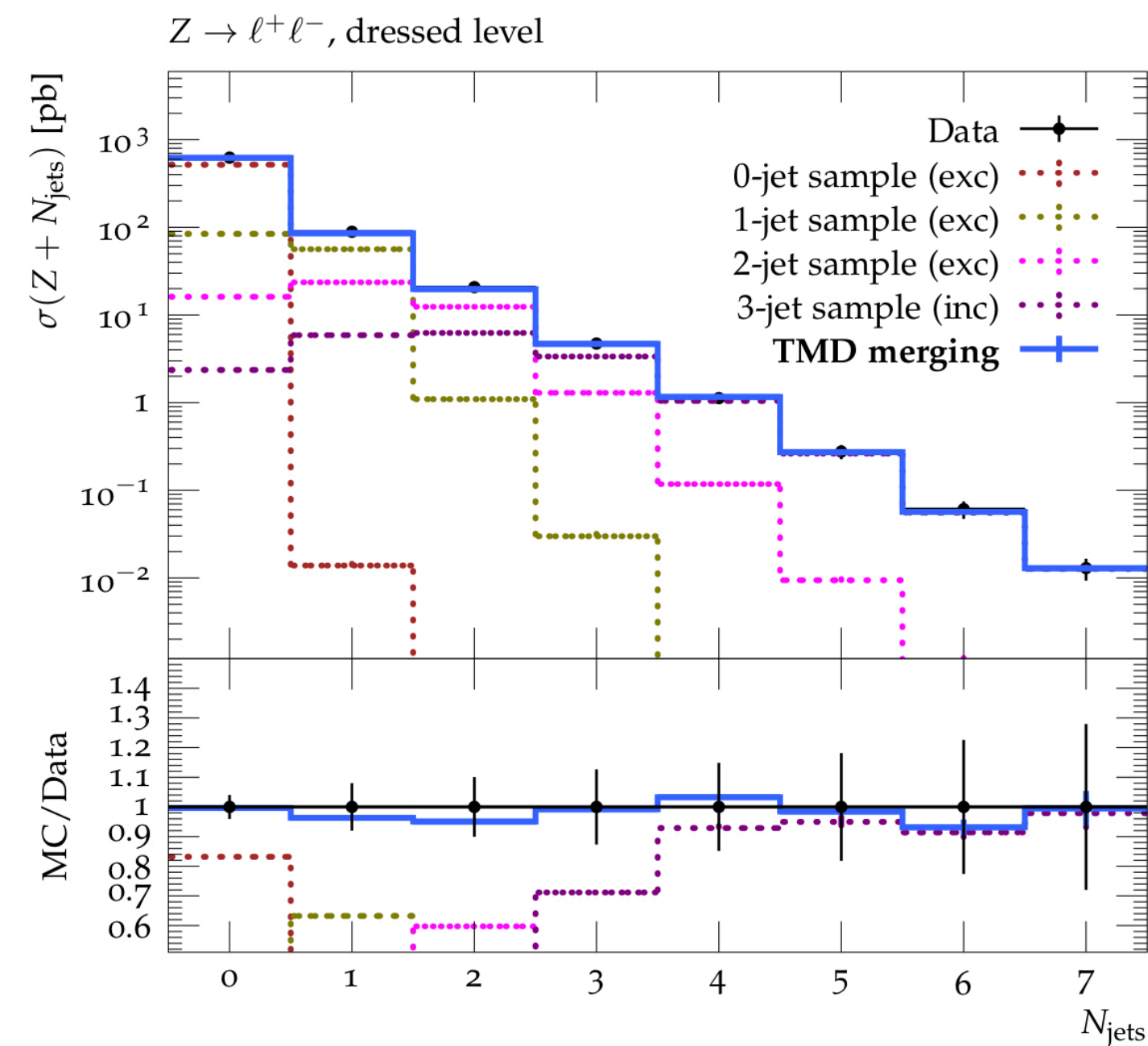
A recent research project:

Multijet TMD merging

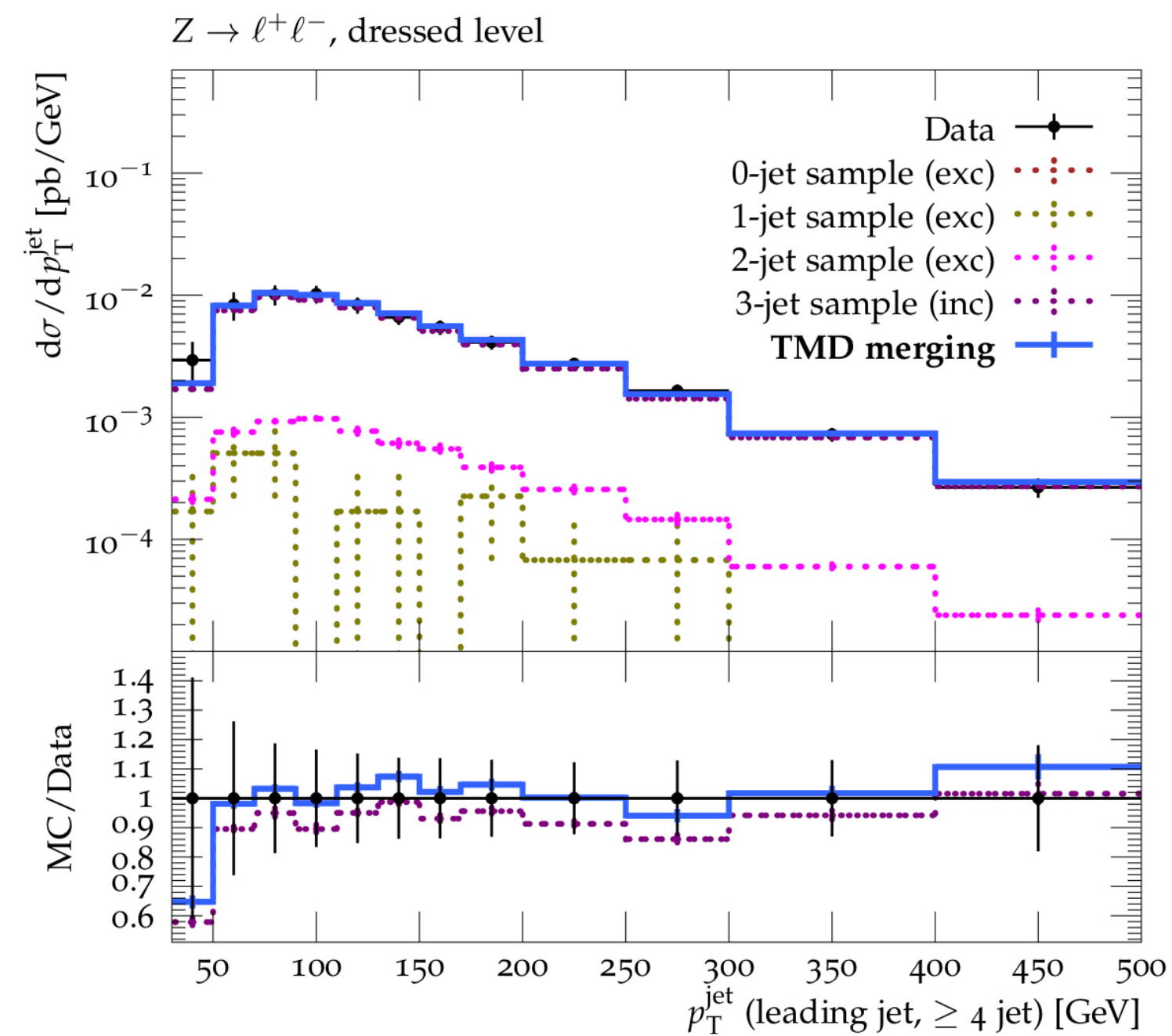
(TMD: transverse momentum dependent initial state evolution)

A. Bermudez Martinez, F. Hautmann, M.L. Mangano <https://arxiv.org/abs/2208.02276>

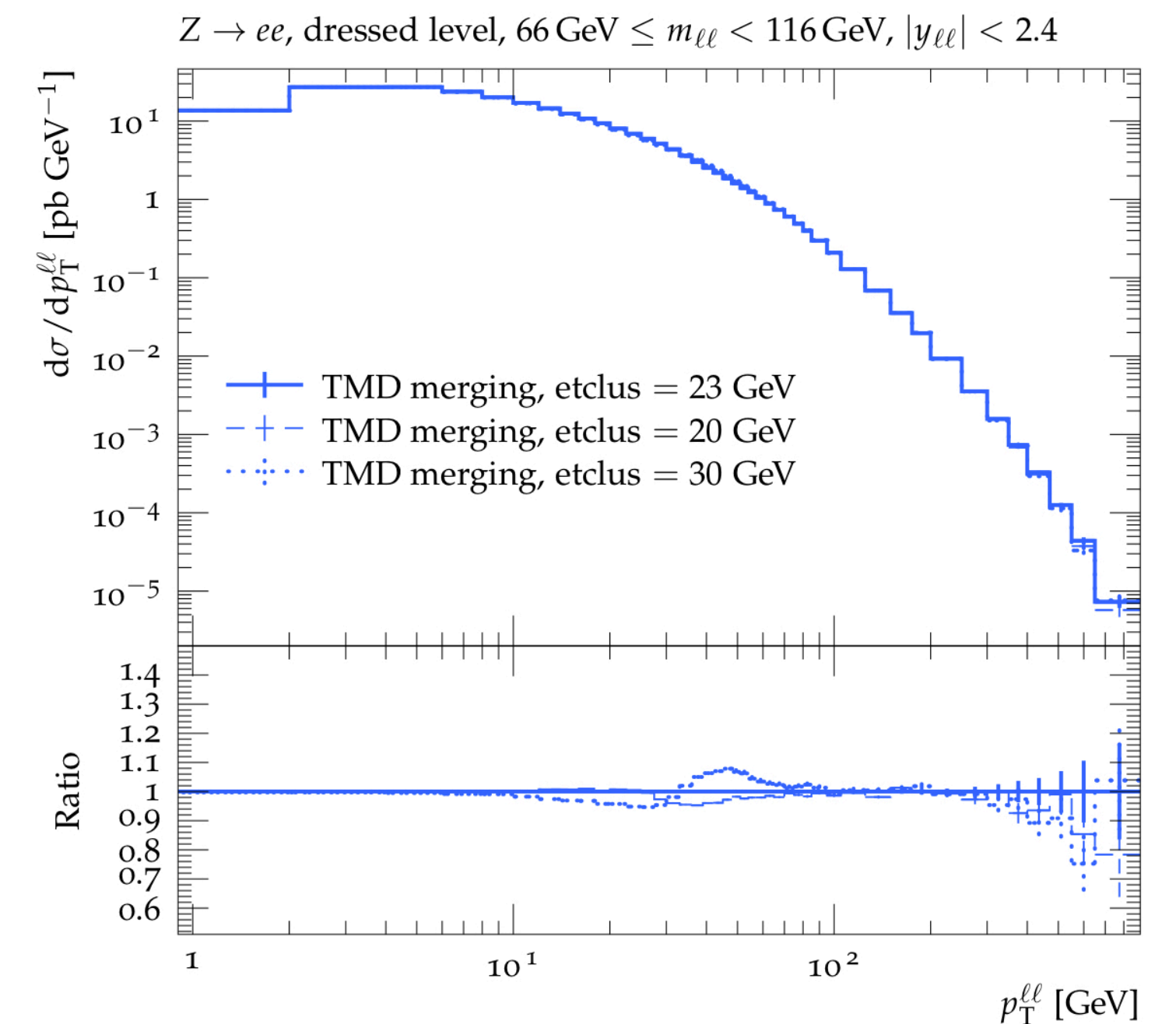
vs ATLAS Z+multijet data



large jet multiplicities



pt spectra



reduced systematics

Ongoing work: comparison with LHC pure multijet data, extension to NLO merging (fxfx-like)

Main responsibilities at CERN

Head of the LHC Physics Centre at CERN

The screenshot shows the website for the LHC Physics Centre at CERN. The header includes the CERN logo and navigation links for 'ABOUT', 'LHC WGS', 'LHC PUBLICATIONS', 'EVENTS', and 'NEWSLETTER'. The main content area is divided into three columns. The left column lists 'LPCC forthcoming events' with details for several meetings, including the LHC TOP WG meeting, LHC EW precision sub-group meeting, ATLAS seminar, LHC EW WG General Meeting, Area 6 meeting, PDF4LHC meeting, 12th LHC students poster session, and 5th General Meeting of the LHC EFT Working Group. The middle column contains 'Status of LHC ops' and 'Coming events at CERN'. The right column has a text box with a link to sign up for the LPCC Newsletter.

CERN Accelerating science Sign in Directory

LPCC
LHC Physics Centre at CERN

[ABOUT](#) [LHC WGS](#) [LHC PUBLICATIONS](#) [EVENTS](#) [NEWSLETTER](#)

LPCC forthcoming events

LHC TOP WG meeting
Open LHCTopWG Meetings - 09/11/2022 - 13:00 to 18:00

LHC EW precision sub-group meeting
Electroweak precision measurements - 14/11/2022 - 13:30 to 18:30

ATLAS
LHC Seminar - 15/11/2022 - 11:00 to 12:00

LHC EW WG General Meeting
Electroweak precision measurements - 15/11/2022 - 13:50 to 18:45 - CERN - 40/S2-B01

Area 6 meeting: Heavy flavour aspects in EFT fits
Open meetings - 21/11/2022 - 14:00 to 18:00 - CERN - 40/S2-A01

PDF4LHC meeting
PDF4LHC - 23/11/2022 - 09:00 to 19:00 - CERN - 40/S2-B01

12th LHC students poster session
Miscellanea - 29/11/2022 - 10:00 to 12:00

5th General Meeting of the LHC EFT Working Group
Open meetings - 02/12/2022 - 09:00 to 18:00 - CERN - 40/S2-A01

(1 · 2)

Status of LHC ops

Follow the status of LHC operations [here](#)

Follow the record of delivered pp luminosity [here](#)

Coming events at CERN

^3He production, absorption cross section and...

Collider Cross Talk - 10 Nov 11:00-12:00 - CERN - 4/2-011 - Ivan Vorobyev,PIERRE SALATI,...

Quantum foundations at colliders

TH BSM Forum - 10 Nov 13:30-14:30 - CERN - 4/3-001 - Alan Barr

Go [here](#) to sign up for the periodic LPCC Newsletter (info on forthcoming LHC-related events)

2013-2021: coordination of physics potential assessment of FCC-hh

Head of a new Future Collider Unit (RCS-PRJ-FC) at CERN

LHC Committee: referee of the “smaller” experiments (TOTEM, LHCf, MoEDAL, FASER, SND)

Chair of CERN’s Scientific Information Policy Board

Chair of TH short-term visitors committee

Scientific Information Policy Board

Examples of SIPB activities/initiatives of relevance to TH

CERN Open Access Policy

<https://home.cern/news/announcement/cern/cern-revises-its-open-access-policy>

Interactive tool to guide you in ensuring your publications are Open Access (esp for journals outside of SCOAP3):

<https://cern-sis.github.io/cern-authors-guide/>

Inspire:

- supervision of the CERN development team and strategies
- SIPB chair ex-officio member of the International Inspire Advisory Committee

CERN [Yellow Reports](#), library issues

outside work ...

