

THE ETH ZURICH NODE

ETH Zurich
University of Zurich
Paul Scherrer Institute (PSI)

Node coordinator: G. Dissertori

PEOPLE INVOLVED

AND HOW THEY CONTRIBUTE TO THE NETWORK

▶ Experimental Physicists

- ▶ **G. Dissertori (ETH Zurich):**
Node coordinator; Supervision of ESR15; Contribution to the organization of the summerschool 2016 (ZUOZ)
- ▶ **R. Wallny (ETH Zurich):**
Co-supervision of ESR15; brings in extensive experience on the application of the matrix-element method (MEM) to hadron collider data analysis; Contribution to the organization of the summerschool 2016 (ZUOZ)
- ▶ **F. Canelli (Uni Zurich):**
Co-supervision of ESR15; brings in extensive experience on the application of the matrix-element method (MEM) to hadron collider data analysis; member of the MEM technique workshop board.
- ▶ **B. Kilminster (Uni Zurich):**
co-convener in CMS for the “Future Higgs analyses” working group

PEOPLE INVOLVED

AND HOW THEY CONTRIBUTE TO THE NETWORK

▶ Theoretical Physicists

- ▶ **Ch. Anastasiou (ETH Zurich):**
Precision Higgs boson phenomenology and BSM extensions of the Higgs sector; collaboration with Durham node; participation in the training part of the network.
- ▶ **A. Lazopoulos (ETH Zurich):**
As Ch. Anastasiou, and in particular: differential cross sections for signal and backgrounds in Higgs physics
- ▶ **A. Signer (PSI/ Uni Zurich):**
Co-organizer of summer school Zuoz 2016, expertise in higher-order calculations and applications of effective theories
- ▶ **M. Spira (PSI):**
Co-supervision of ESR14; Co-organizer of Zuoz summer school (2016), Higgs physics and supersymmetry

PEOPLE INVOLVED

AND HOW THEY CONTRIBUTE TO THE NETWORK

▶ Theoretical Physicists (contd)

- ▶ **T. Gehrmann (Uni Zurich):**
Improved predictions for Standard Model Higgs boson scenarios (in collaboration with UDUR)
- ▶ **A. Gehrmann-De Ridder (Uni Zurich/ETH Zurich):**
Precision top quark phenomenology; expertise in higher order QCD computations of jet observables.
- ▶ **M. Grazzini (Uni Zurich):**
supervision of ESR14, brings in an extensive experience in higher-order and resummed QCD computations for Higgs physics
- ▶ **S. Pozzorini (Uni Zurich):**
co-supervision of ESR15; extensive experience in the simulation of multi-particle processes and applications to ttH production

▶ Experimental Physics:

- ▶ strong expertise in data analysis at hadron colliders (Tevatron and LHC), in particular with the application of the MEM to hadron collider data analysis; strong and leading involvement in the CMS experiment, including management roles.
- ▶ long-standing experience in student supervision (Master and PhD students)
- ▶ extensive experience with outreach activities (public talks, guided tours)
- ▶ experience in organization of workshops, summer/winter schools

- ▶ **expertise relevant for**
WP1 : Tasks 1.2, 1.4
WP2 : Task 2.3
WP3 : Task 3.1
and also for WPs 4,6 and 7.

THE NODE'S EXPERTISE

▶ Theoretical Physics:

- ▶ Zurich is world leading centre for particle physics phenomenology, especially higher order pert. QCD and EW calculations; great expertise for Higgs physics and supersymmetry, NLO automation, top-quark phenomenology, event simulation, interpretation of high energy collider data, computer algebra applications to particle physics; close collaborations with LHC experimental groups
- ▶ long-standing experience in student supervision (Master and PhD students)
- ▶ experience in organization of workshops, summer/winter schools
- ▶ **expertise relevant for**
WP1 : Tasks 1.1,1.2,1.3
WP2 : Tasks 2.1,2.2,2.3
WP3 : Task 3.2
and also WPs 4 and 7

POSSIBLE COLLABORATIONS WITH OTHER NODES

▶ Experimental Physics:

- ▶ FOM-Louvain: application of the MEM to the measurement of $t\bar{t}H$ production
- ▶ UDUR (ICL) and DFTTO: exchange of know-how (Higgs analysis techniques) within CMS
- ▶ ALUF: exchange of know-how between ATLAS and CMS for the $t\bar{t}H$ measurement

POSSIBLE COLLABORATIONS WITH OTHER NODES

▶ Theoretical Physics:

- ▶ with UDUR on Improved predictions for Standard Model Higgs boson scenarios and on backgrounds
- ▶ with FOM on Improved predictions for Standard Model Higgs boson scenarios and on backgrounds
- ▶ with DFTTO and DESY on NNLO parton distributions
- ▶ with UDUR and ALUF on NLO automation and matching

LINKS WITH ACTIVITIES OUTSIDE THE NETWORK

- ▶ Participation in the FP7-ITN LHCPHENONET
 - ▶ M.Grazzini, S.Pozzorini, A. Gehrmann-De Ridder (supervision of ESR and ER projects), G. Dissertori
- ▶ Participation in the LHC Higgs Cross Section Working group
 - ▶ M. Grazzini, M. Spira
- ▶ Management roles in the CMS experiment, in particular experience in overall Physics coordination, and Physics subgroup convenerships:
 - ▶ G. Dissertori, B. Kilminster

LINKS WITH ACTIVITIES OUTSIDE THE NETWORK - CONTD

- ▶ Session conveners of the Les Houches Workshops
 - ▶ G. Dissertori, M. Grazzini
- ▶ Organizers of summer/winter schools, such as ZUOZ, CHIPP School, LHCPhenoNet school Ascona
 - ▶ G. Dissertori, M. Spira, A. Signer, M. Grazzini