

A brief presentation of myself



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CERN

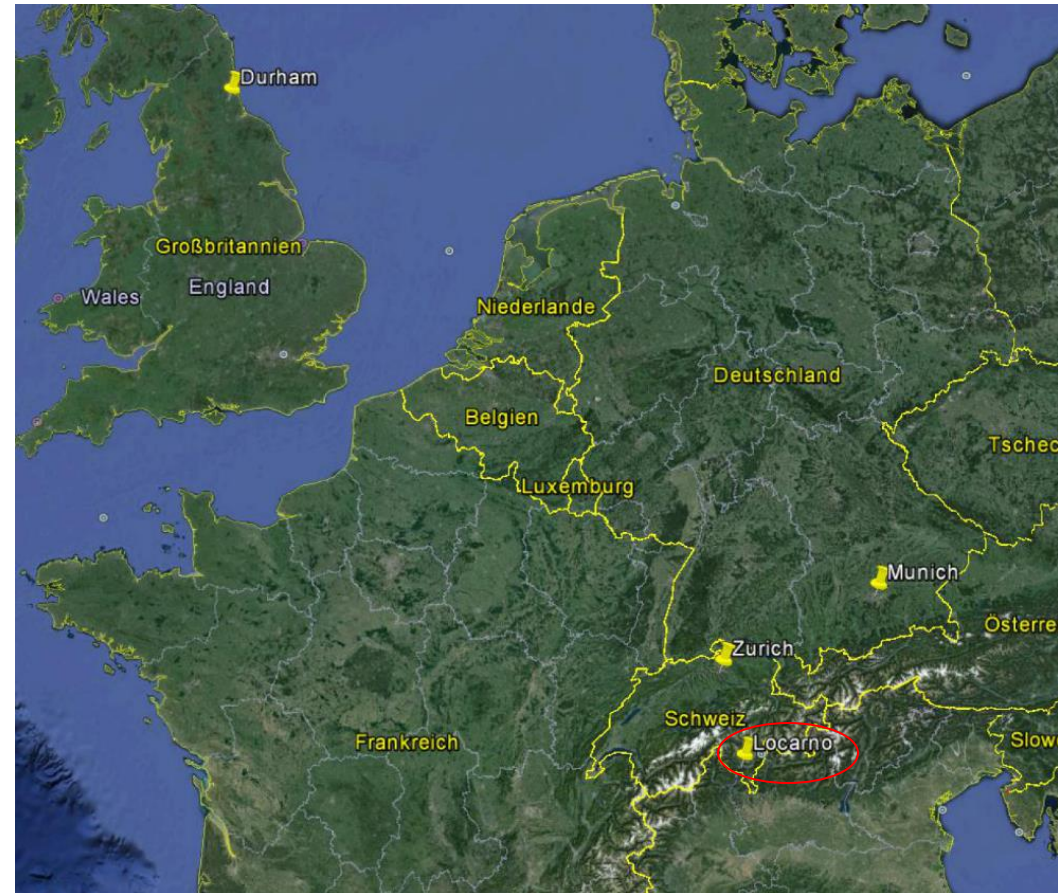
CERN Theory Group Retreat 2015

4-6.11.2015 – Les Houches



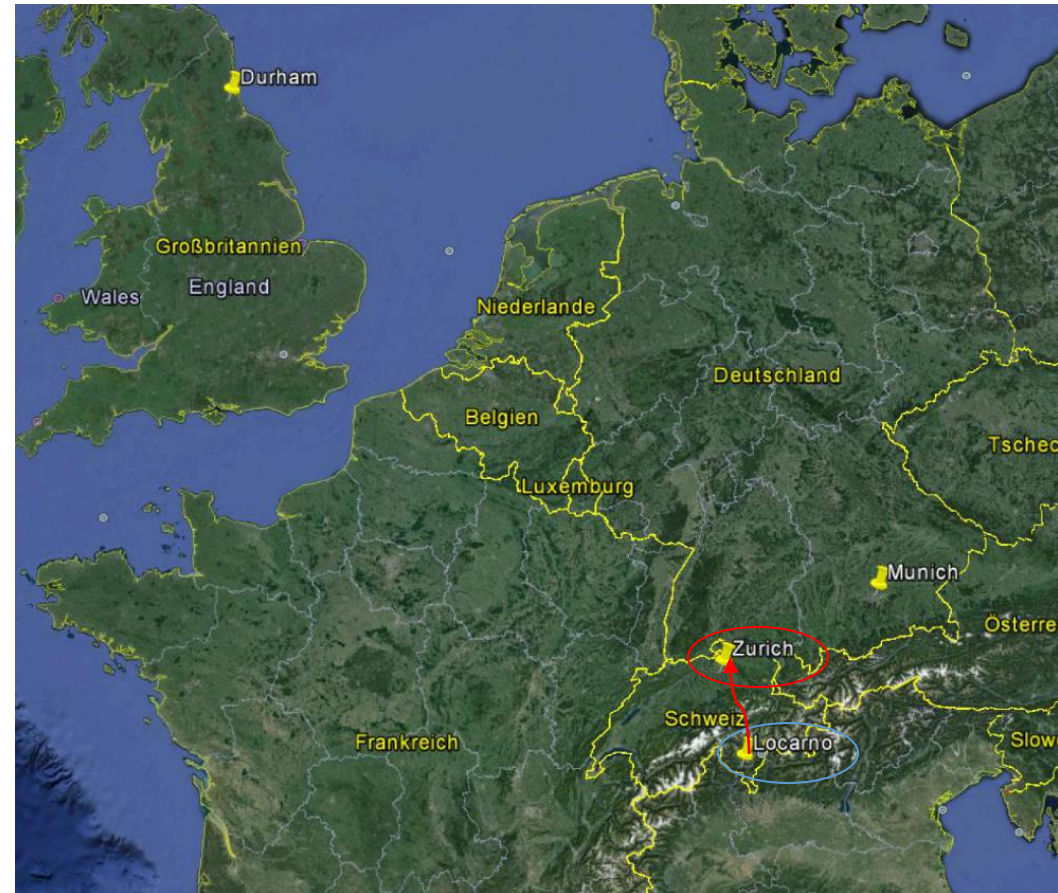
How did I reach CERN

- Born in '83 in Locarno (Switzerland)
- 2002-2007: Physics study at ETH in Zurich
- 2007-2010: PhD at University of Zurich with *T. Gehrman*
- 2010-2012: Postdoc at the Institute for Particle Physics Phenomenology in Durham (UK) with *G. Heinrich*
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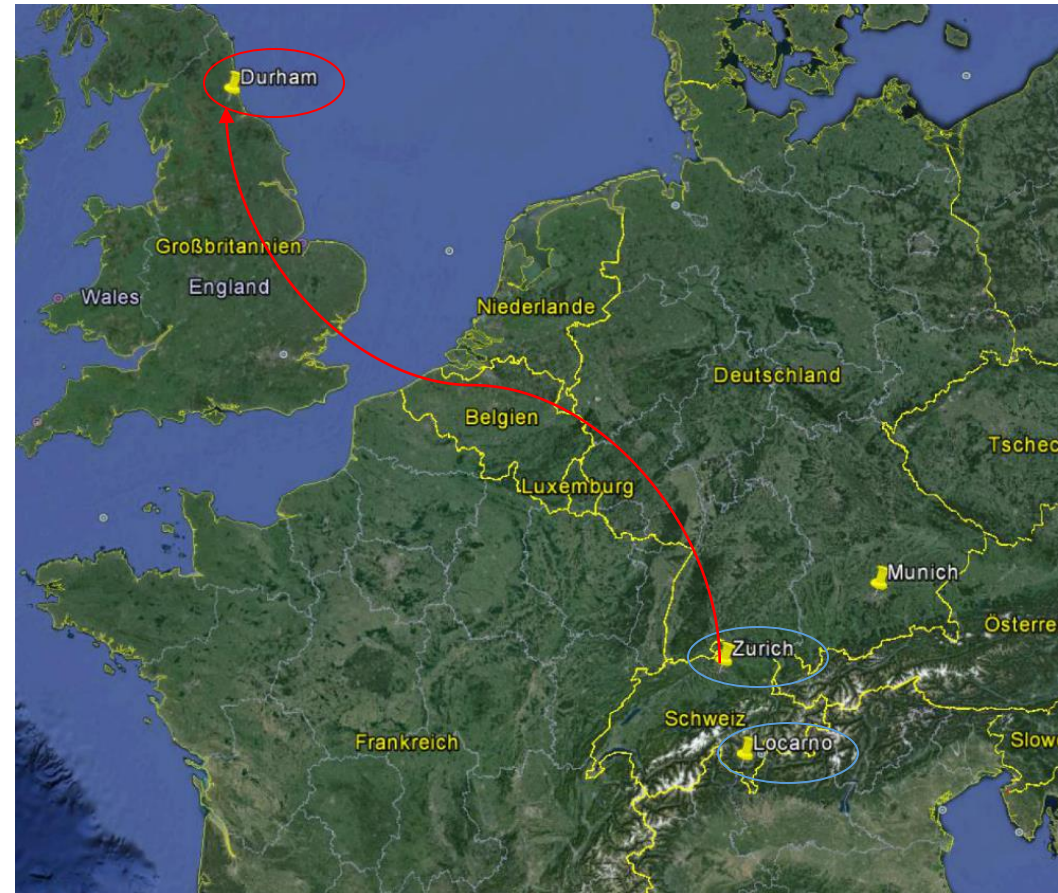
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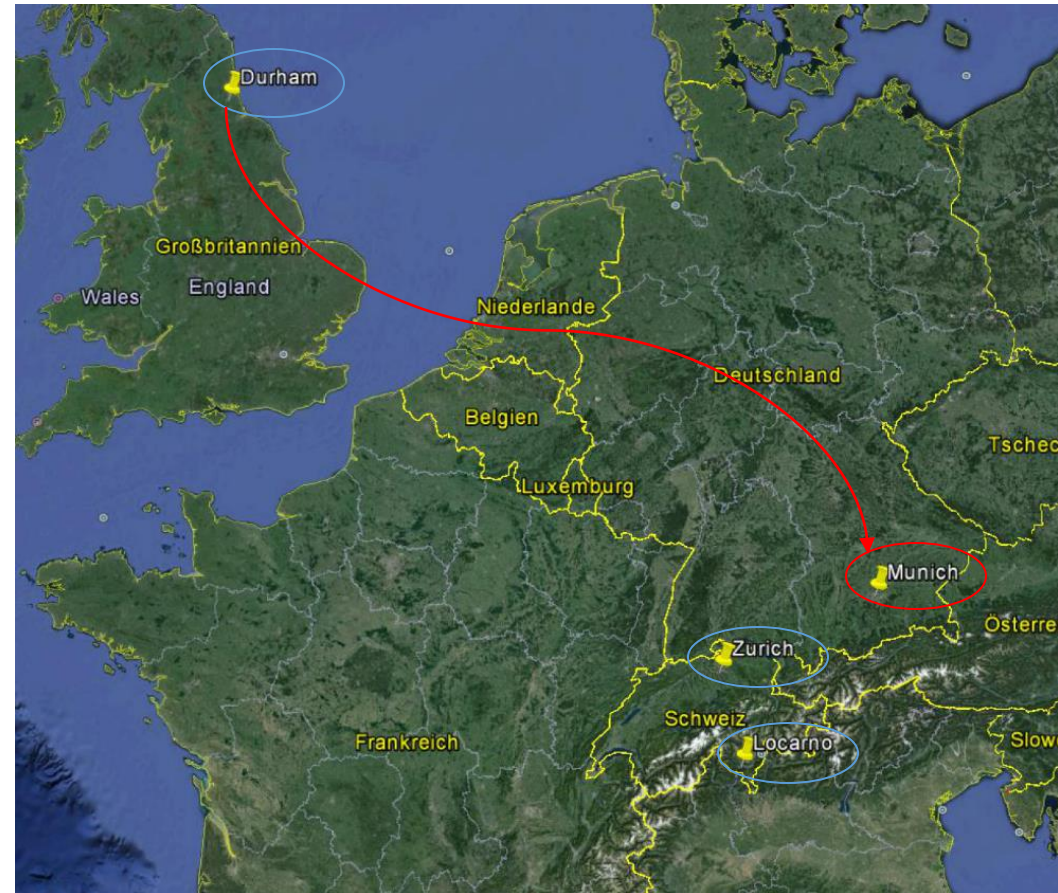
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Main research interests

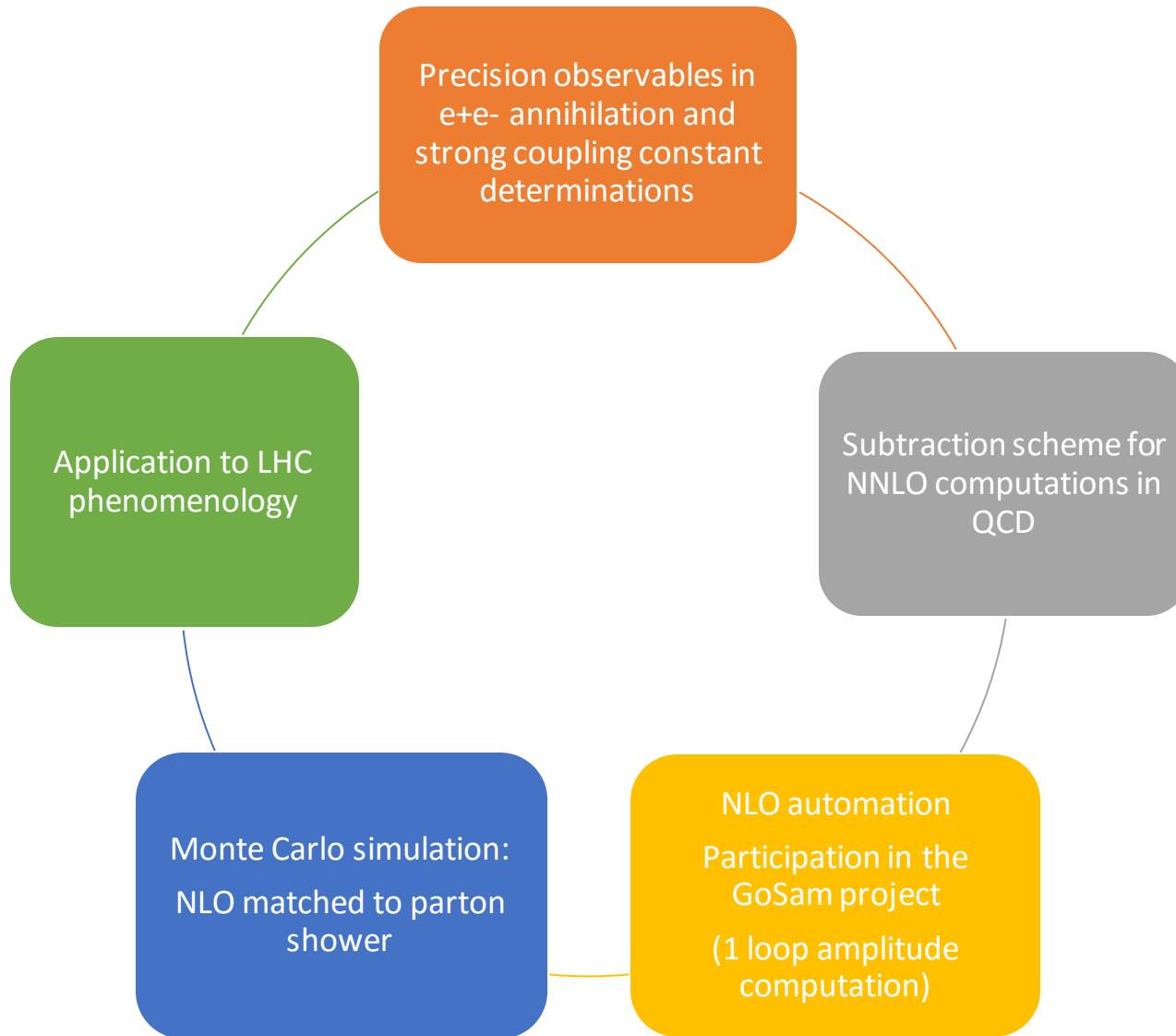
- The **main focus** of my research activity is **higher order corrections** in the Standard Model (SM) and in particular **precise QCD** calculations

GOAL: provide SM prediction **as precise as possible** to be compared with experimental data in order to

- understand and/or discover potential tensions between data and theory
- Precise determinations of SM parameters (masses and couplings)



Main research interests



Recent activities and achievements

Recently some computations (and codes) have been published which are used or captured the interests of the experimental community, e.g.:

- **HV + 0, 1 jet** ($V=W^\pm, Z^0$) production at NLO within the POWHEG-BOX
 - NLO + parton shower framework [Nason, Oleari, Tramontano, GL]
 - Used by the LHC experiments to model the signal process
- **Higgs + 1,2,3 jets** productions at NLO in QCD in gluon-gluon fusion (GGF)
 - Experimentally important to estimate precisely the contamination of GGF contribution in vector boson fusion (VBF) sample
[van Deurzen, Greiner, Heinrich, Höche, Jahn, Mastrolia, Ossola, Peraro, Schlenk, Schönherr, von Soden-Fraunhofen, Tramontano, Yundin, Winter, GL]

Development of the codes which allow to perform this computations, according to the practical needs and the wishes of the experimental community

Plans for the future

- Further development of existing and potential new tools to produce precise predictions for the LHC and other future colliders:
 - Faster / more stable / more flexible (e.g. Electroweak)
 - Higher order
 - ...

- Phenomenological studies to get new insights and exploit at most the great amount of data LHC is providing. E.g.:
 - Signal vs. background study for Higgs production in GGF and VBF

On all these plans (and others I haven't thought of) I am looking forward to starting new collaborations and projects with people of the theory group!