

Peter Richardson

CERN TH & IPPP

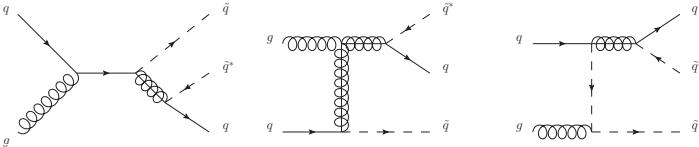
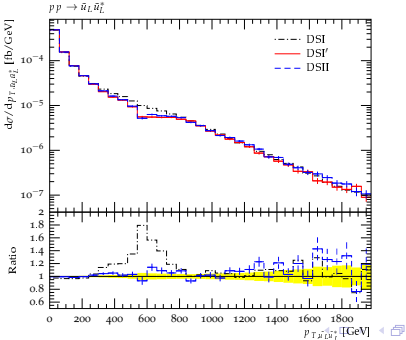
Les Houches: 4th November

# Introduction

- Just starting a 5 year staff position (on leave from the IPPP, Durham).
- Main interest is general collider phenomenology, both Standard Model (SM) and Beyond the Standard Model (BSM) physics.
- That lead to an interest in Monte Carlo event generators as one of the best methods to study collider physics.
- Historically I was mainly interested in the search for BSM physics and simulation of BSM processes.
- In the buildup to and during the first run of the LHC that lead to me mainly working on improving the accuracy of simulations, primarily for the SM but also still some BSM physics.

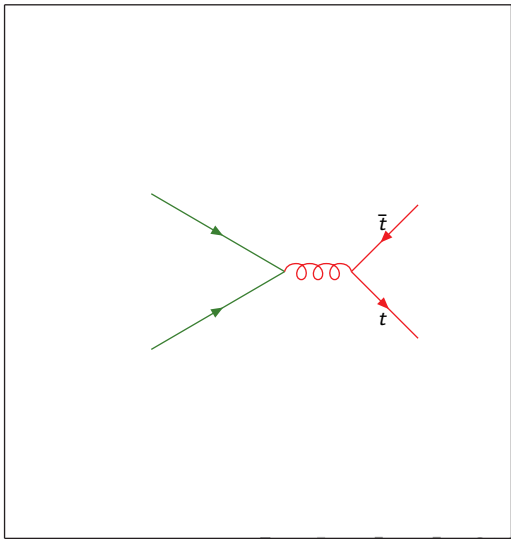
# BSM Simulation

- Simulation of QCD in BSM signals can be important as well.
- Examples include degenerate spectra where the recoil against QCD radiation gives the only missing transverse energy.



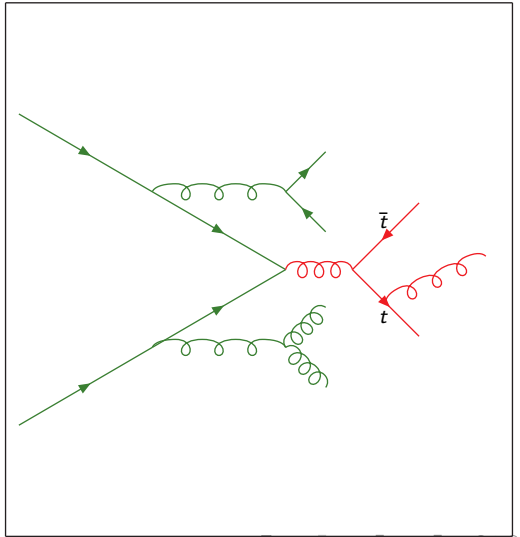
# Top Production

- Measurement of top mass.
- Only quark which decays before hadronization.
- Important background to BSM physics
- Many interesting issues for the simulation.
- Treatment of mass effects
- Interference between production and decay.



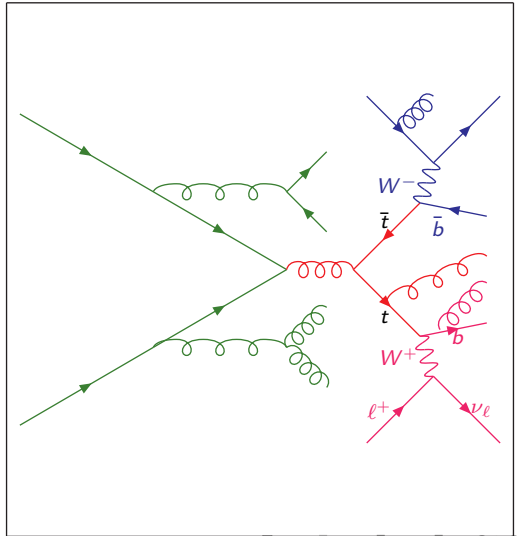
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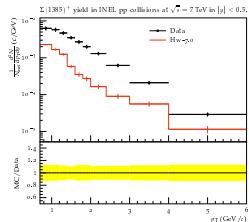
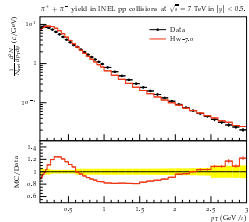
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# Hadronization

- Last 5 years lot of focus on perturbative physics, less focus on the non-perturbative physics.
- Kaon and baryon production not as well described as we would expect.
- Need to look at hadronization and colour reconnection models again.



ALICE results