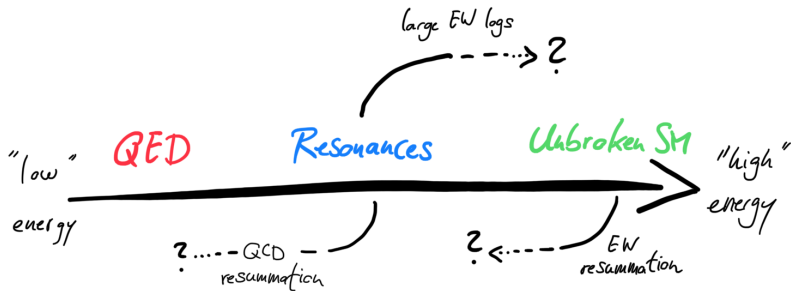


Electroweak effects &|| multiboson processes ...with generator bias

S. Prestel (Lund) ͡(ツ)͡

Snowmass Community Planning Meeting, 2020-10-08

What is it about? Why should we care? No boson is an island...



Check out e.g. <https://indico.fnal.gov/event/45400/> or the EW at high energies Lol for some context. Please excuse omissions!

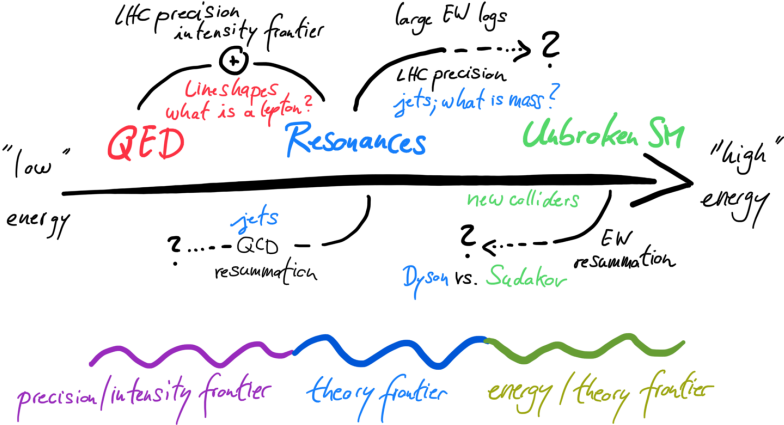
Electroweak effects &|| multiboson processes ...with generator bias

S. Prestel (Lund)



Snowmass Community Planning Meeting, 2020-10-08

What is it about? Why should we care? There's still a lot to do!



Electroweak effects &|| multiboson processes ...with generator bias

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QED showers:

QED done right is as complicated as $N_c = 3$ QCD!

YFS might not be enough?

$\mu \neq \text{electron!}$

⇒ Precision work: Always more to do :)

Fixed-order + shower:

Beware of resonant, non-resonant & interference!

Mix of QCD and EW logarithms?

How do we define mass?

How to handle the width?

⇒ HL-LHC will want more!

EW showers/factorization

not colliding $SU(2)$ singlets → Bloch-Nordsieck violations → no IR safety

1000s of different transitions!

PDFs beyond the effective W approximation?

Are (new) colliders in the broken, the unbroken or the transition regime?

⇒ So much fun to be had!