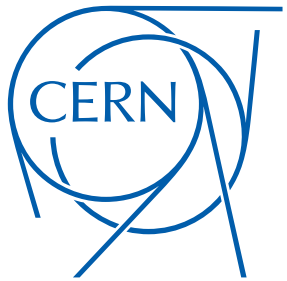
Vjj – theory status

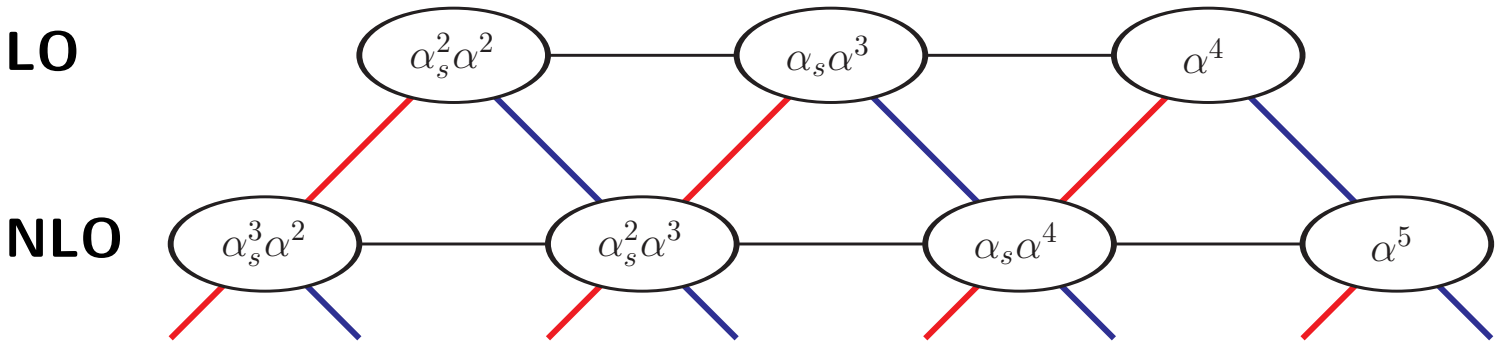
Marek Schönherr

CERN

VBF Discussion

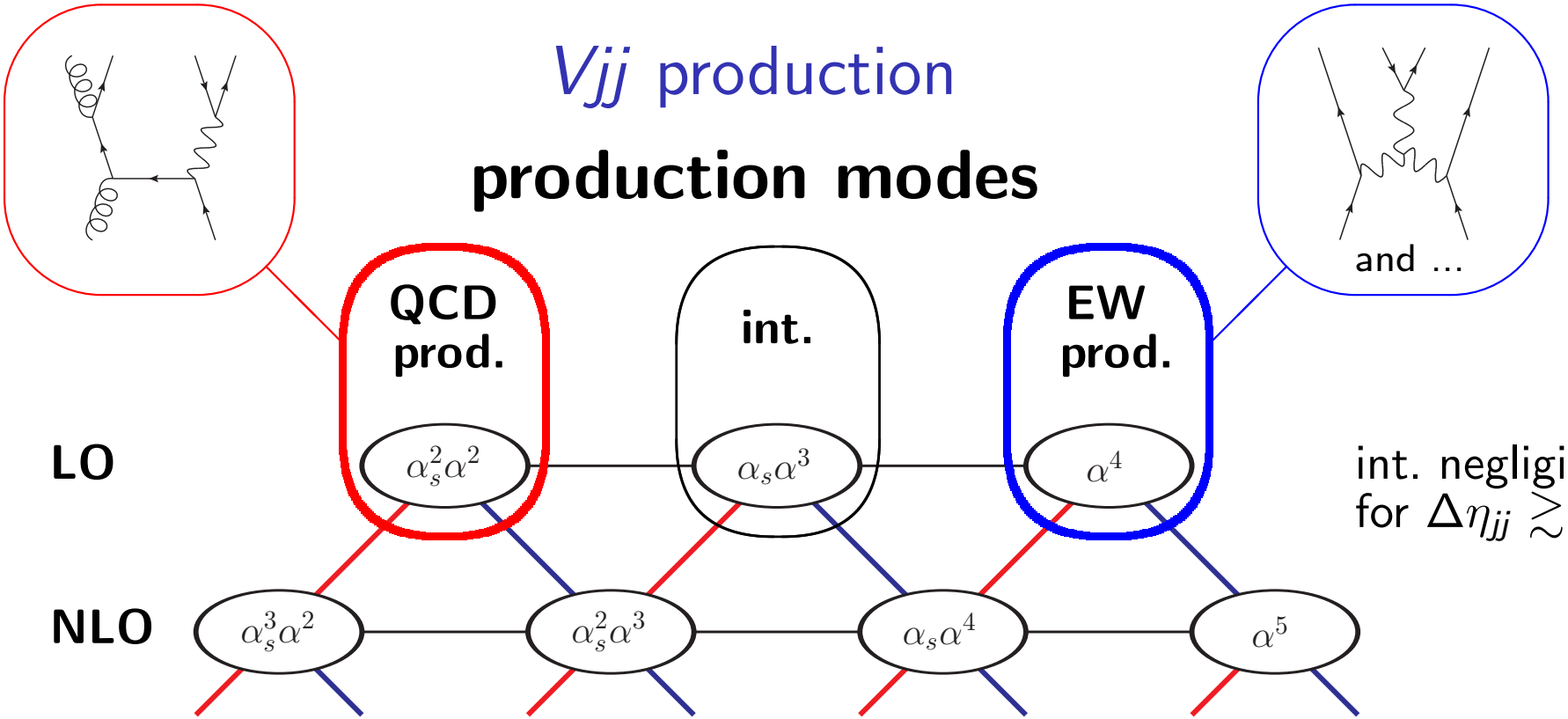


Vjj production



Vjj production

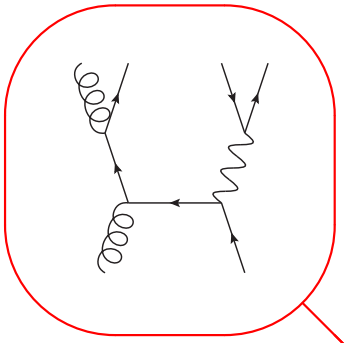
production modes

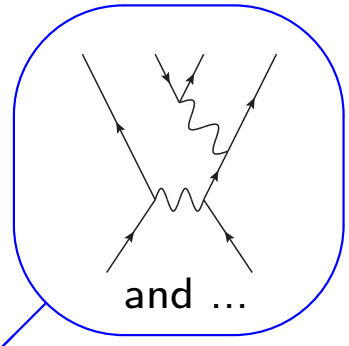


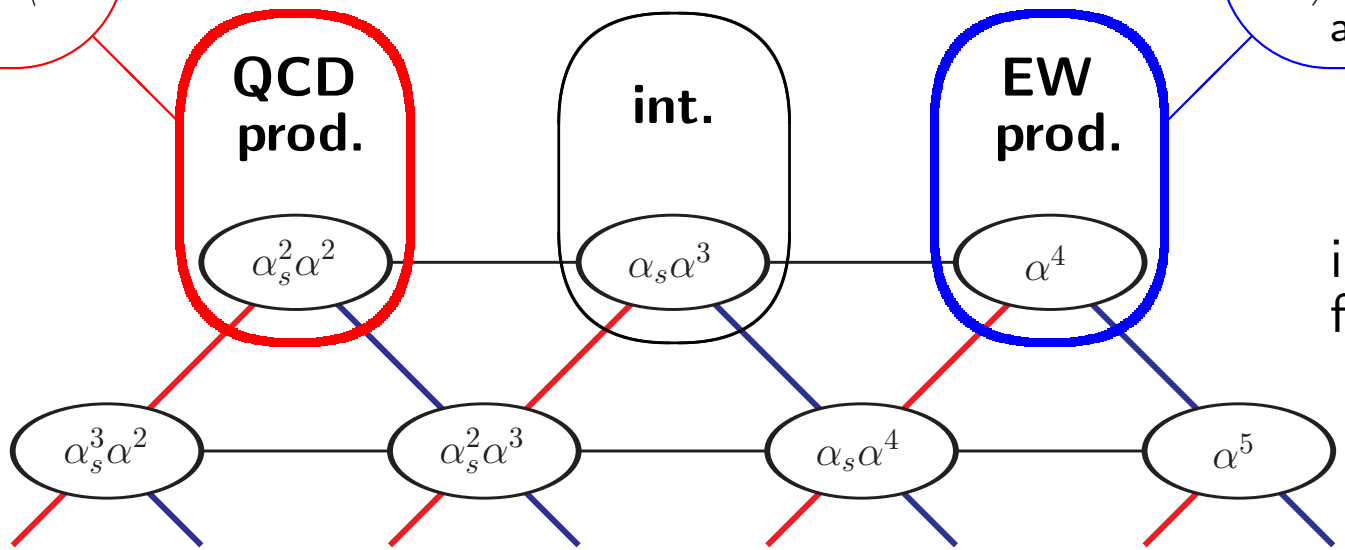
int. negligible for $\Delta\eta_{jj} \gtrsim 2$

Vjj production

production modes







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Vjj production

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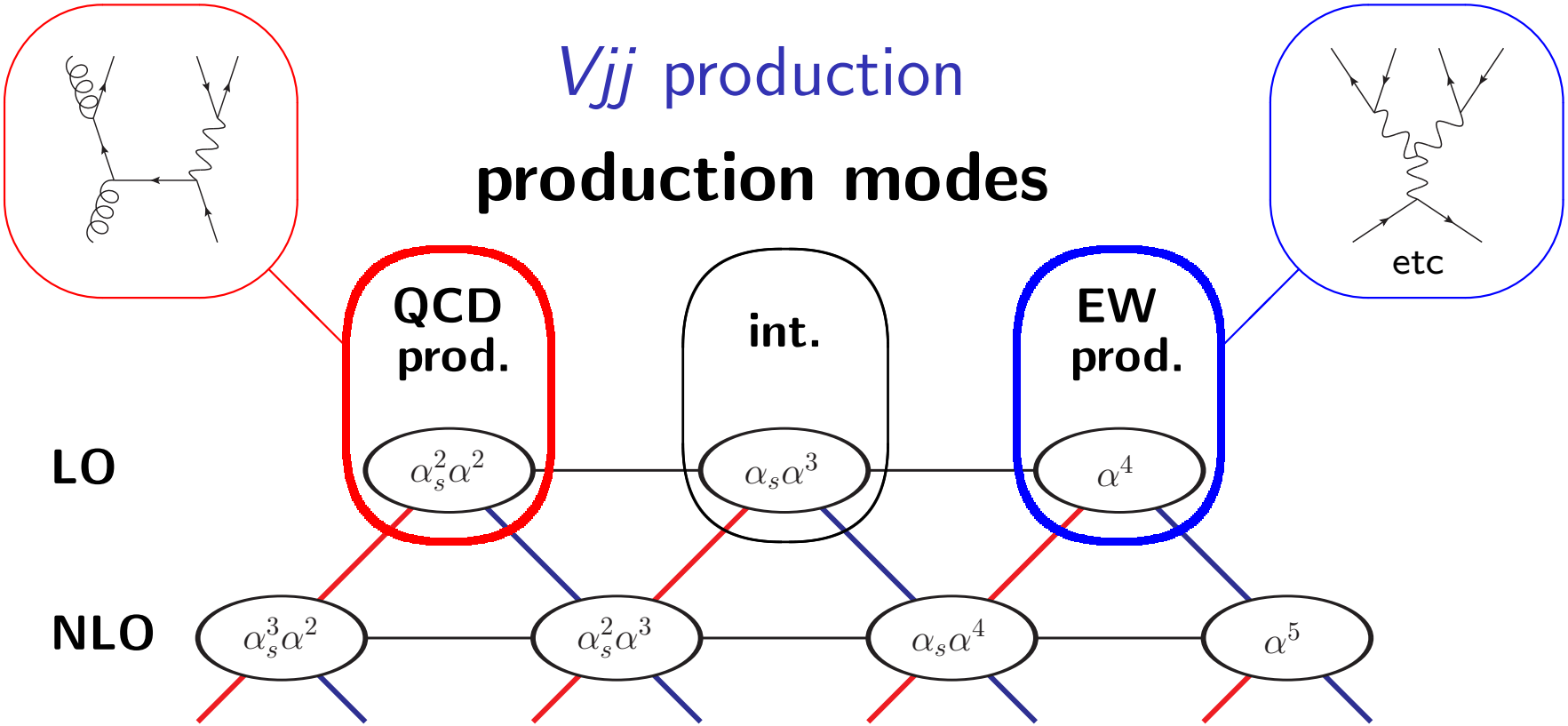

Vjj production

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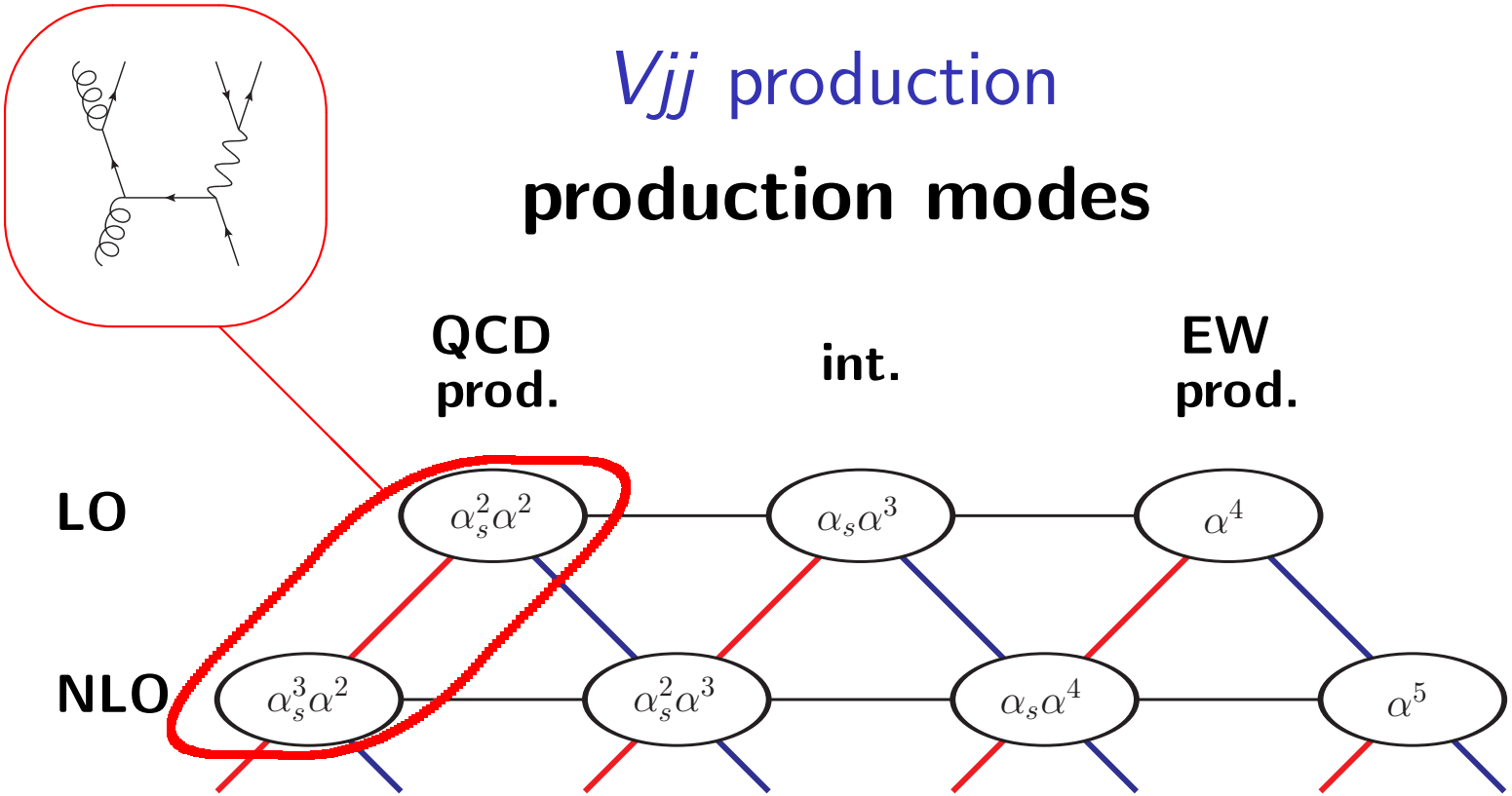
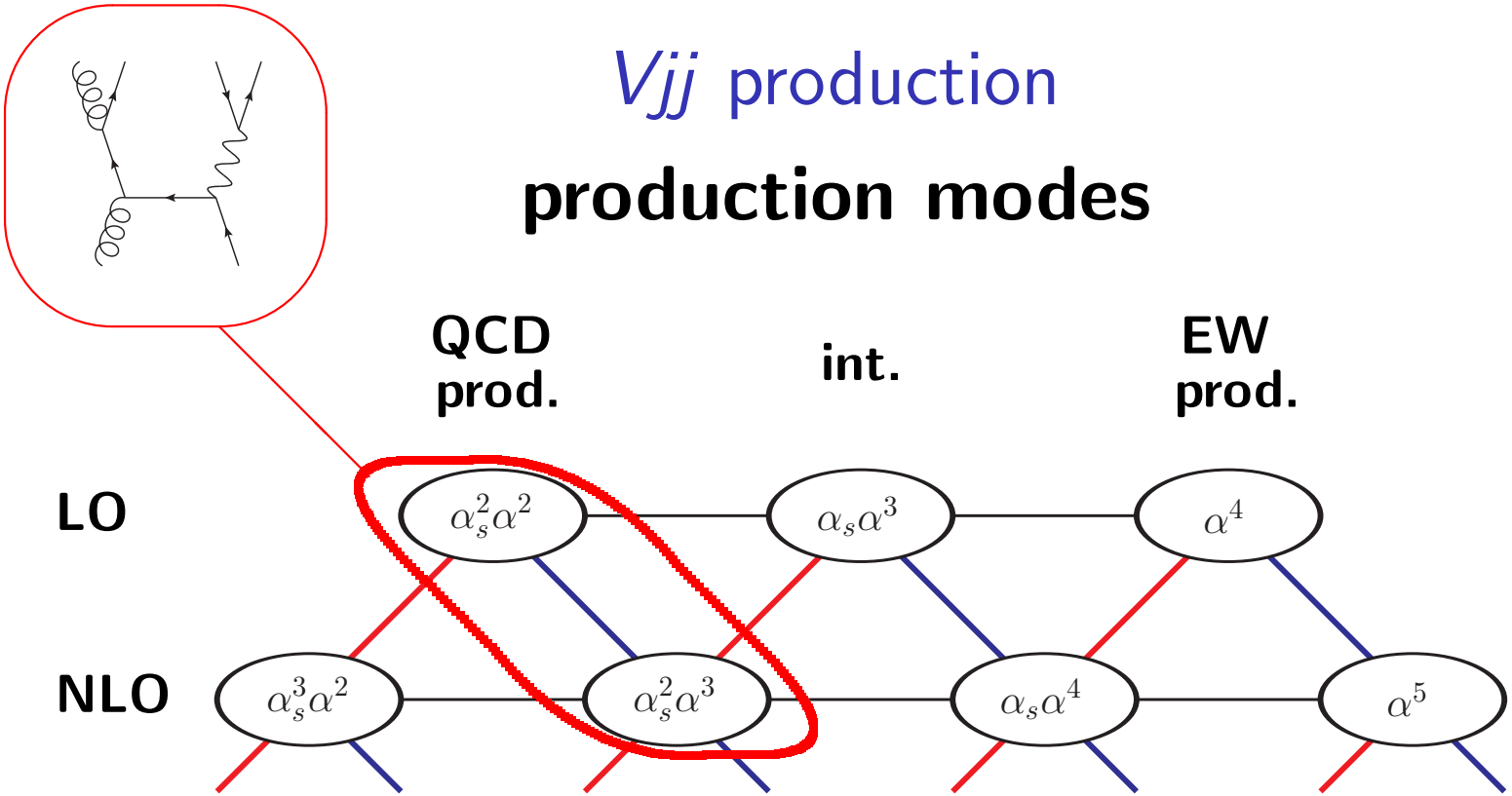


NLO QCD

part of SHERPA MEPS@NLO Z + jets sample

Vjj production

production modes



NLO QCD

part of SHERPA MEPS@NLO Z + jets sample

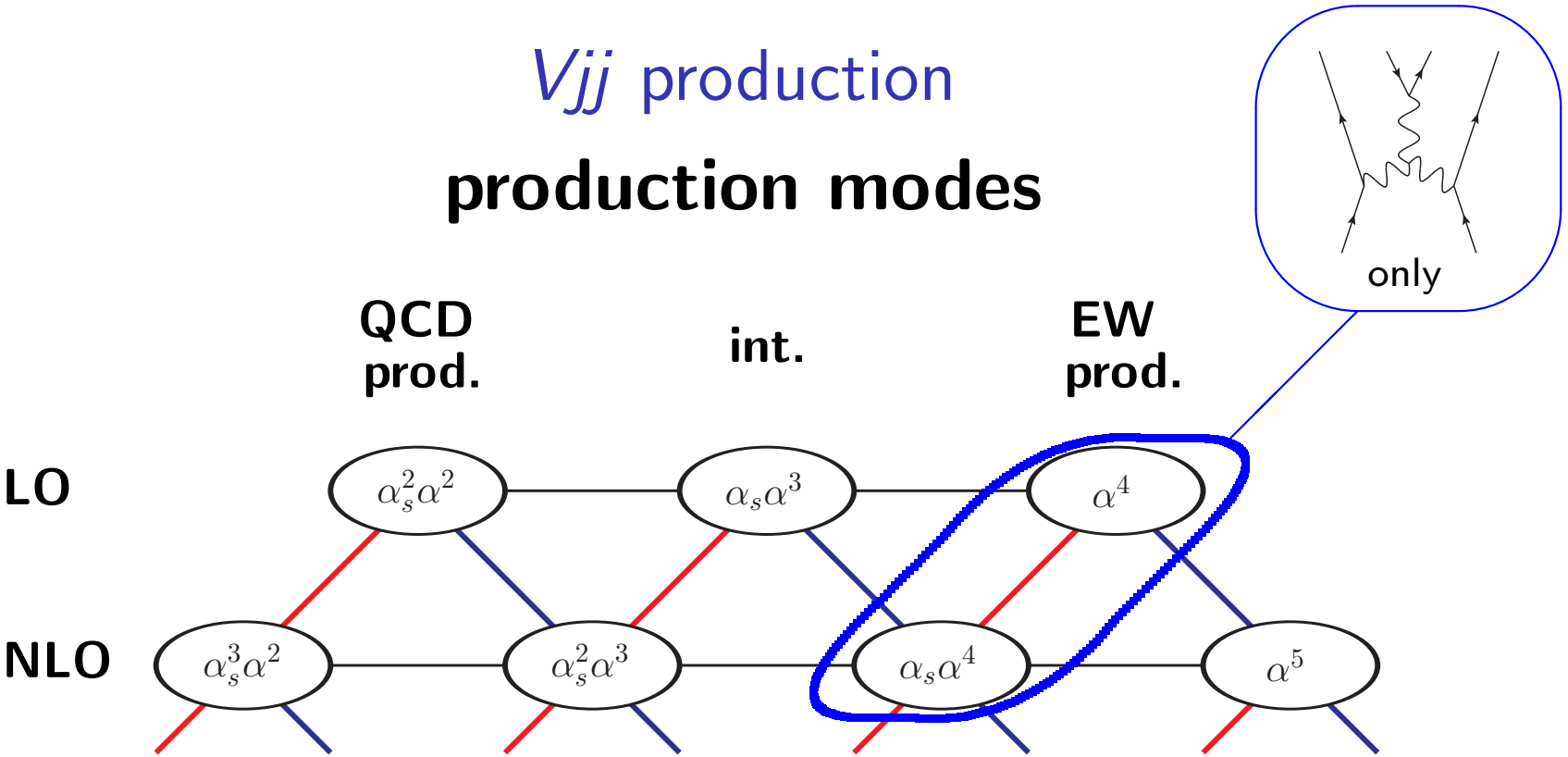
NLO EW

approx. can be incl. in SHERPA MEPS@NLO

not incl. in std. ATLAS/CMS samples yet

Vjj production

production modes



NLO QCD

part of SHERPA MEPS@NLO Z + jets sample

NLO EW

approx. can be incl. in SHERPA MEPS@NLO

not incl. in std. ATLAS/CMS samples yet

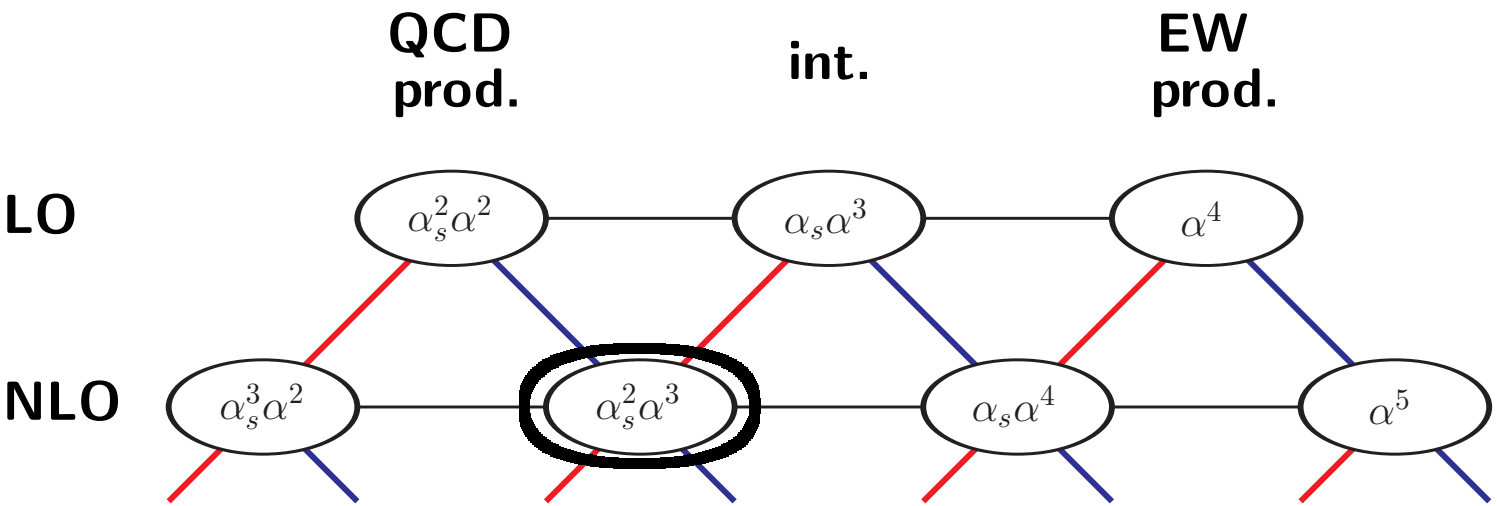
NLO QCD in VBF approx.

part of POWHEG Zjj-EW sample

invalid outside VBF phase space

Vjj production

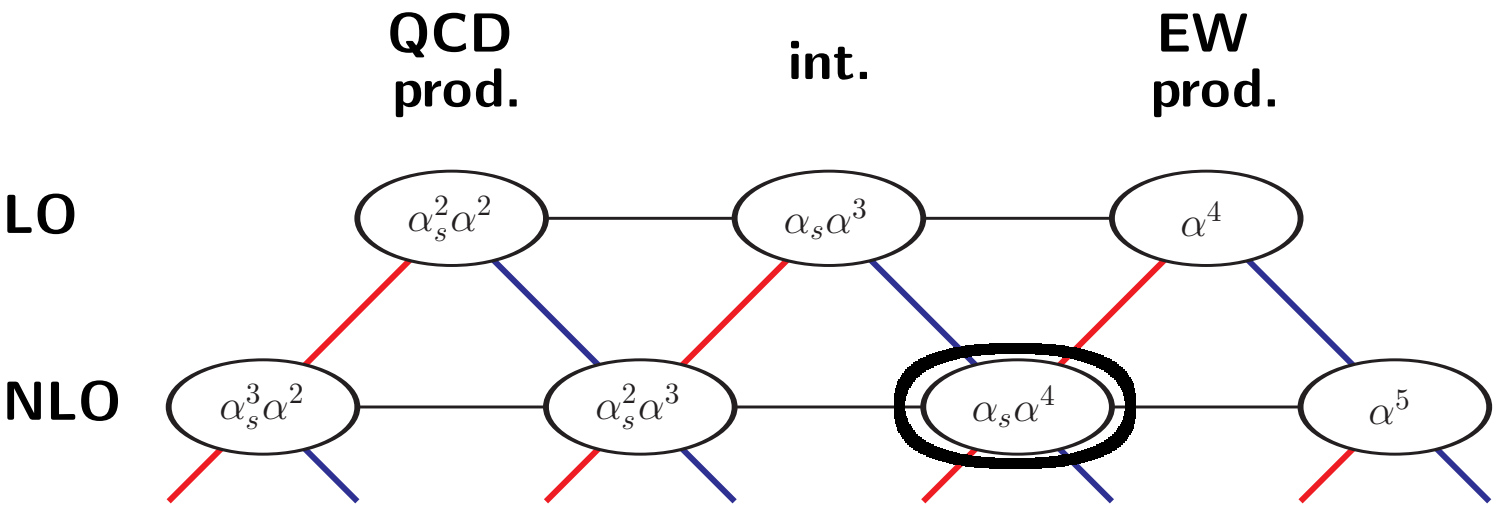
production modes



NLO EW to QCD production also QCD correction to interference

Vjj production

production modes



NLO EW to QCD production also QCD correction to interference

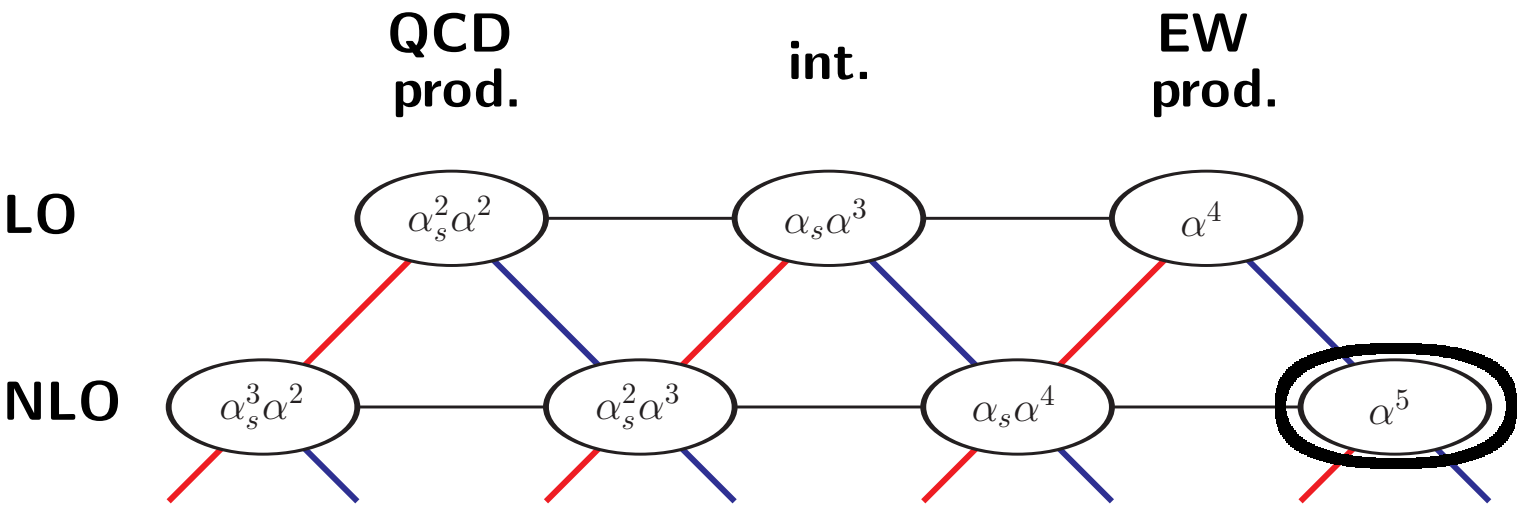
Currently unknown (will be calculated by us):

NLO QCD to full EW production also EW correction to interference

$\rightarrow$ no clear separation of QCD and EW production

Vjj production

production modes



NLO EW to QCD production also QCD correction to interference

Currently unknown (will be calculated by us):

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$\rightarrow$ no clear separation of QCD and EW production

NLO EW to full EW production expected to be sizeable

Vjj production

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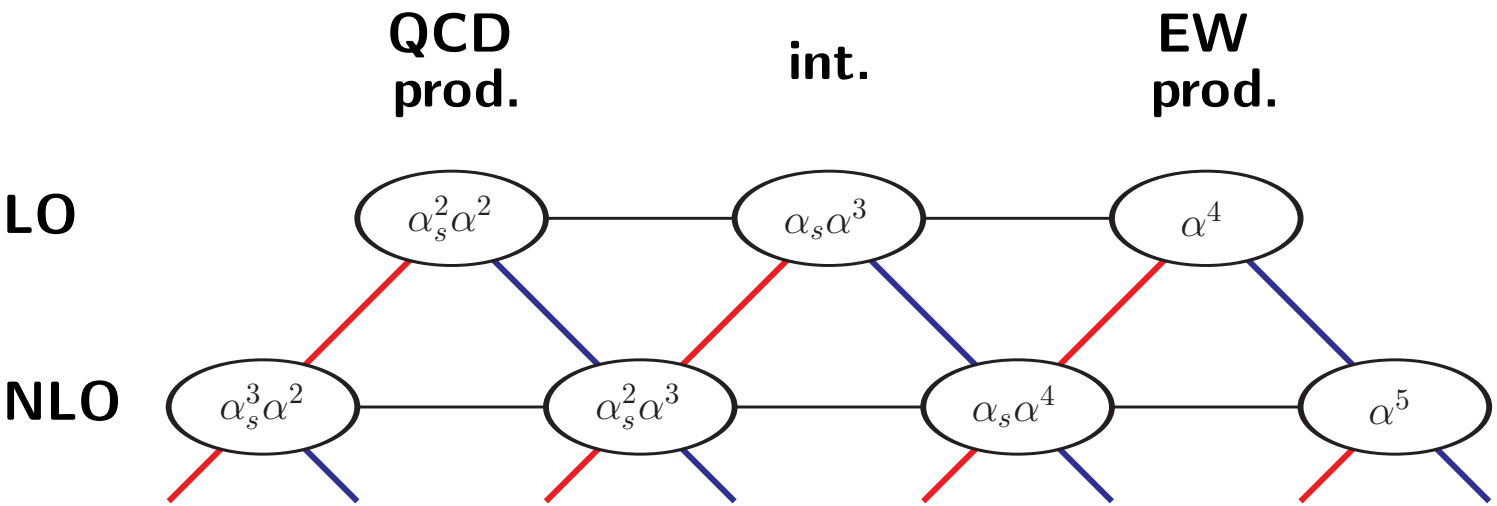

Currently unknown (will be calculated by us):

precise predictions for ratios between different processes

– predict $Z[\to \nu\nu]jj$ from related process

– also provide other ratios for consistency checks