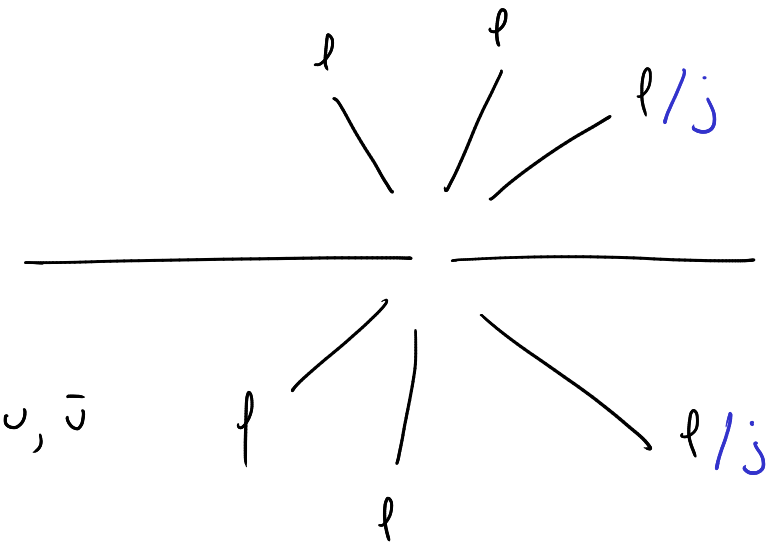


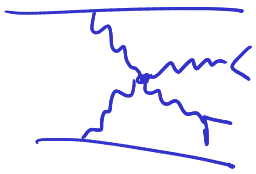

$\sigma \propto \int d\Phi |\mathcal{M}|^2$

$\{l\} = l^+, l^-, \nu, \bar{\nu}$

triboson

↳ quartic coupling

VBS



↳ unitarity / quartic coupling

VH

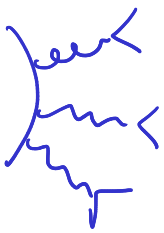
↳ Higgs prop.

VBF

↳ Higgs prop.

Decay chain

Vs + jets



↳ QCD

All:

- SM test
- boson polarisation

a) All contributing to measurement.

↳ difficult (impossible) to isolate single contribution.

b) ⇢ cuts (exp.) or on-shell approx. (th.)

↳ easier to compute

↳ good enough?

↳ interplay with cuts

↳ assumtion: no overlap between ≠ prod.

- VBF $m_{4\ell} \in [m_H - \varepsilon ; m_H + \varepsilon]$
- VH $m_{4\ell} / m_{2\ell+2j} \in$ ..
- VBS $m_{jj} >> 1$ .

} $\frac{\Gamma_H}{m_H} << 1$

↳ higher-order effects / exp. constraints.

c)

- full measurement vs. full computation (off-shell + irr. bck)
- full meas. – QCD (based on MC) vs. full EW (pb. of int.)
- full meas. – undesired (MC) = interesting EW contribution

- physical / less sexy [meas. of $\ell, j, p_T$ miss, ...]
- [EW prod. of ...]
- less physical / more sexy

↳ extract quantities (mass, coupling, EFT, ...)