

Pos: a few other things

PO CPs

LHC Higgs Cross Section Working Group 12 - 13 April
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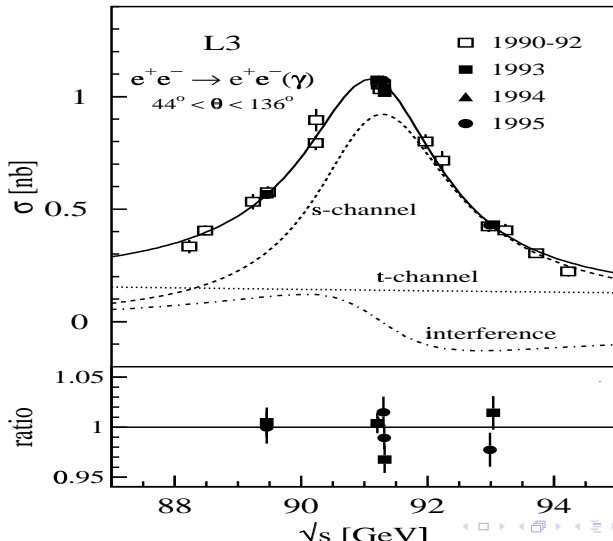


Example

- **RD** = real data
- **RO** = from *real data* \rightarrow distributions with cuts \equiv **RO**
 - diphoton pairs $(E, p) \rightarrow M(\gamma\gamma)$;
- **PO** = transform the *universal intuition* of a *QFT-non-existing* quantity into an *archetype*, e.g. $\sigma(gg \rightarrow H), \Gamma(H \rightarrow \gamma\gamma)$,
 - $\text{RO}_{\text{th}}(m_H, \Gamma(H \rightarrow \gamma\gamma), \dots)$ fitted to RO_{exp} (e.g. $\text{RO} = M(\gamma\gamma)$) defines and extracts m_H etc.



Lep example of RO



LHC example of POs

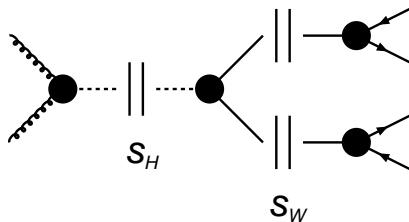


Figure: Gauge-invariant breakdown of the triply-resonant $gg \rightarrow 4f$ signal into $gg \rightarrow H$ production, $H \rightarrow W^+ W^-$ decay and subsequent $W \rightarrow f\bar{f}$ decays.



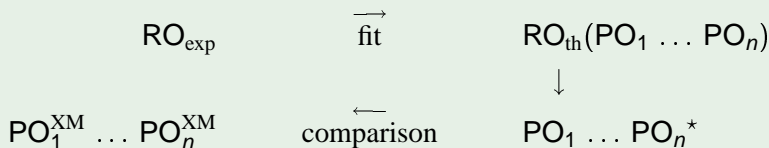
Strategy

- go via idealised (model-independent?) **RO** distributions and from there then going to the **POs**.
 - **Step 0)** Use a (new) **MCT** – the **PO code** – to fit **ROs**
 - **Step 1)** Understand **differences** with a *standard* event generator plus detector simulation plus *calibrating* the method/event generator used (which differ from the PO-code in its theoretical content)
 - **Step ≥ 2)** Let's see



Strategy II

Example



- XM = any Model ☆) TH consistent

