



### Brief report on Status of CLIC Higgs Paper

Mark Thomson for the editorial team

**Eur. Phys. J. C manuscript No.** (will be inserted by the editor)

#### **Higgs Physics at the CLIC** e<sup>+</sup>e<sup>-</sup> Linear Collider<sup>\*</sup>

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<sup>3</sup>Present Address: Street, City, Country







### ★ Things are progressing: ...

- enthusiastic agreement from editor that paper should be submitted to EPJC
- paper structure decided
- a very early draft exists
- sections are being filled as analyses are completed
- now need to fill in gaps
- + editing, more editing, …





- **\*** 1) Introduction
- **\*** 2) Simulation and Reconstruction tools
- ★ 3) Overview of Higgs Production at CLIC
- ★ 4) Higgsstrahling at 350 GeV
- ★ 5) WW Fusion all energies: 350, 1.4, 3.0
- ★ 6) ZZ Fusion 1.4 TeV
- ★ 7) Top Yukawa Coupling
- ★ 8) Higgs Self-Coupling
- ★ 9) Higgs Mass
- **\*10) Combined Fits**
- **\*11)** Summary and Conclusions



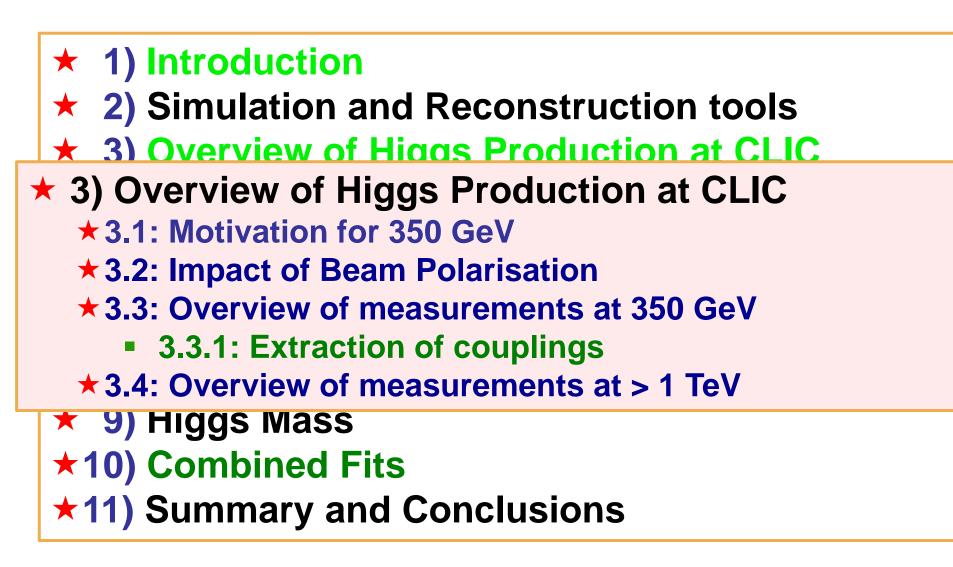




- ★ 1) Introduction
- **\*** 2) Simulation and Reconstruction tools
- **★ 3)** Overview of Higgs Production at CLIC
- ★ 4) Higgsstrahling at 350 GeV (some gaps)
- ★ 5) WW Fusion (some content)
- ★ 6) ZZ Fusion (introductory text)
- **\*** 7) Top Yukawa Coupling
- **\* 8) Higgs Self-Coupling (1.4 TeV to be finalised)**
- ★ 9) Higgs Mass
- **\*10)** Combined Fits (need all final numbers)
- **\*11)** Summary and Conclusions













#### 1) Introduction + 4) Higgsstrahling at 350 GeV ★4.1: Recoil mass ■ 4.1.1: Z → μμ, ee ■ 4.1.2: Z → qq ■ 4.1.3: Z → invis 4.1.4: ZH cross section **★**4.2: Branching ratios ■ 4.2.1: H → bb, cc, gg • 4.2.2: $H \rightarrow \tau \tau$ , bb, cc, gg ■ 4.2.3: H → WW\* ■ 4.2.4: H → ZZ\* II Julillary and conclusions





#### ★ 5) WW Fusion ★ 5.1: Higgs to fermions ■ 5.1.1: H → bb, cc, gg 5.1.2: Η → ττ ★ 5.2: Higgs to WW and ZZ ■ 5.2.1: H → WW\* at 350 GeV ■ 5.2.2: H → WW\* • 5.2.3: H → ZZ\* ★ 5.3: Rare Higgs Decays • 5.3.1: $H \rightarrow \gamma \gamma$ • 5.3.2: $H \rightarrow Z\gamma$ • 5.3.3: Η → μμ





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**★10)** Combined Fits ]-|

★ 9) Higgs Mass

Some thoughts required on BSM sensitivity?

**\***11) Summary and Conclusions



### What next?



#### ★ Timescales

- desire to bring to conclusion asap
- Iots of progress, but still a lot to do...

#### **\*** Highest priorities

- finish remaining analyses lots of progress presented at this meetings
- fill in the missing sections (analyses + ...)
- edit into a consistent style