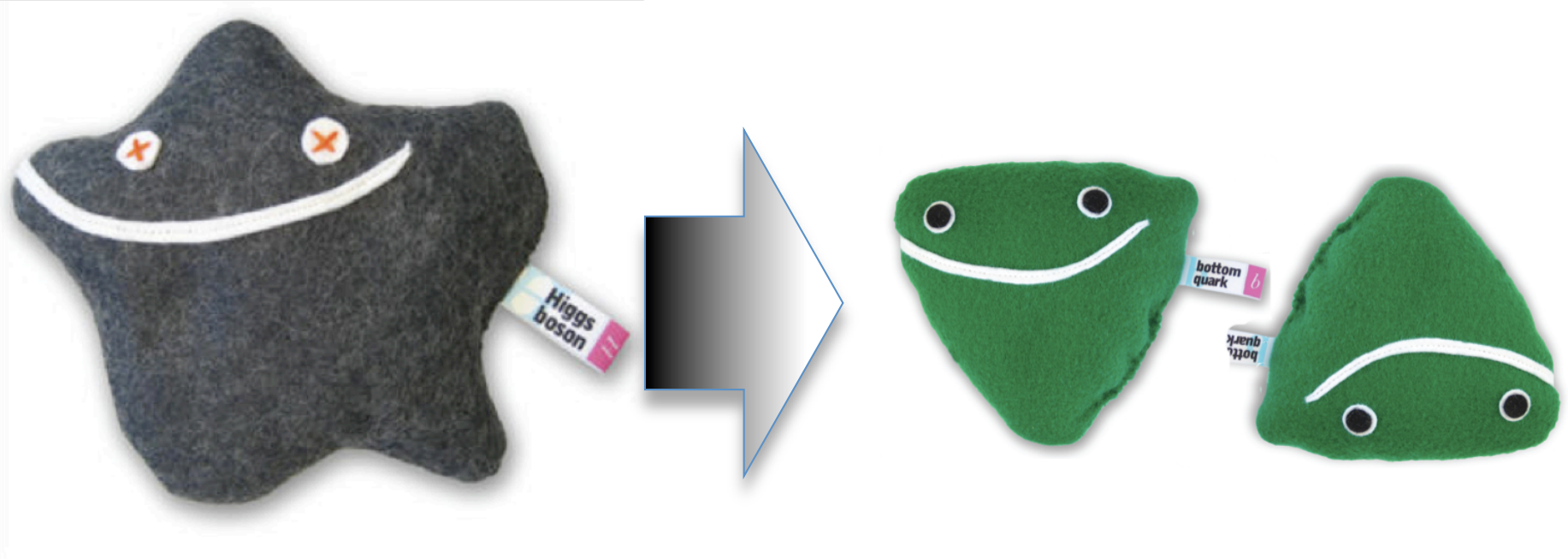
HSG5: Status, Plans, Wishes & Hopes

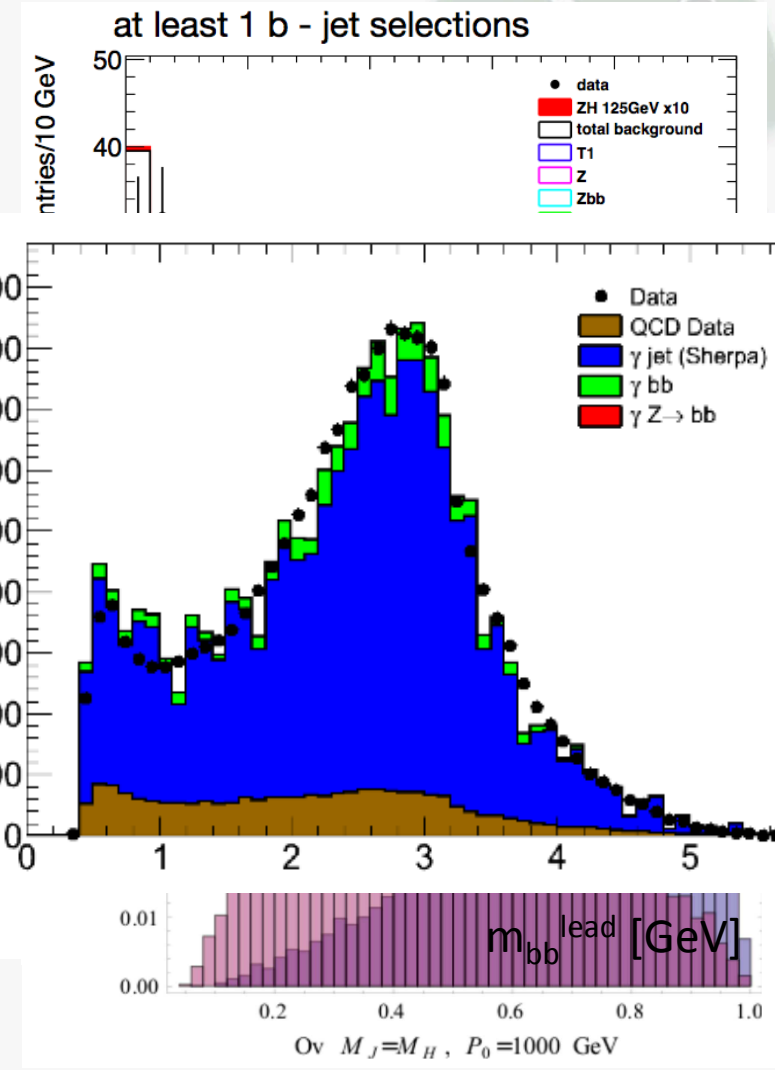


Ricardo Gonçalo (RHUL)

Higgs Working Group Meeting – 29 March 2012

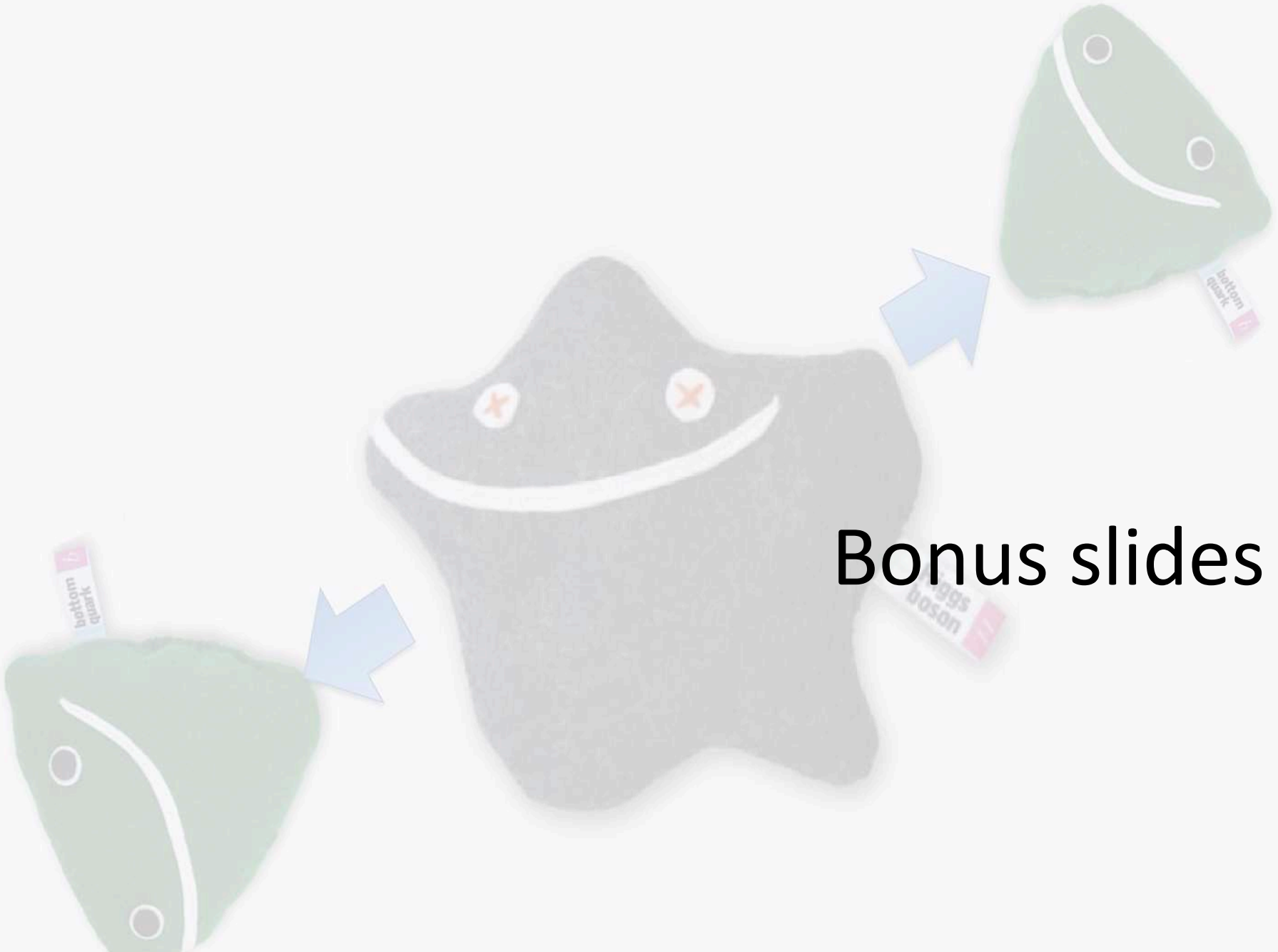
Status

- WH/ZH:
  - CONF note sent to Moriond (2012-015)
  - 3 channels: llbb, lvbb, vvbb
  - Now need to turn into paper
  - Higgs approval next week
  - Timescale: mid-April
- ttH:
  - Analyses of 4.7fb^{-1}
  - Now looking at systematics
  - Lots of work ahead but ramping up nicely
  - Both cut-based and NN analyses
  - New development using kinematic fit
- Boosted VH:
  - Work progressing steadily
  - New development: template method
  - (Rumour) CMS aiming boosted analysis for ICHEP
- Boosted Z->bb:
  - Problem found in MC filter
  - Investigation ongoing
- VBF H->bb:
  - Validating data-driven background determination
  - Badly MC-starved and one-(valiant!)-man show so far
  - But more interest recently
- MSSM bH->bbb:
  - Analysis exploring possible discriminating variables
- γZ->γbb:
  - Work ongoing to isolate γZ->γbb sample
  - Would be great achievement! And great for calibration
- Plus work on trigger, D3PDs, etc



Plans, wishes and hopes

- Plans:
  - First: get the H->bb paper out of the way!
    - Nearly there, but still some work to be done
  - Add boosted VH, H->bb analysis
    - Merge with existing WH/ZH analyses
    - Contributes in the highest $p_T^{W/Z}$ bins of WH/ZH
    - Were aiming for ICHEP but timescale now uncertain
  - Add ttH analysis
    - Difficult but can contribute to H->bb results from 2011/12
    - Need to prepare the future: Higgs property measurements
  - Lateral thinking:
    - WH/ZH and ttH have points of contact with exotics channels
  - Continue to increase contribution to CP activity
    - H->bb channels depend critically on trigger, jets and b-tagging!
  - Timeline:
    - Moslty Aiming for September Strategy Meeting
- Wishes and Hopes:
  - Lots of Monte Carlo! (Preferably MC which reproduces data)
  - Great performance from combined performance
  - Lots of 2012 data to analyze



Bonus slides