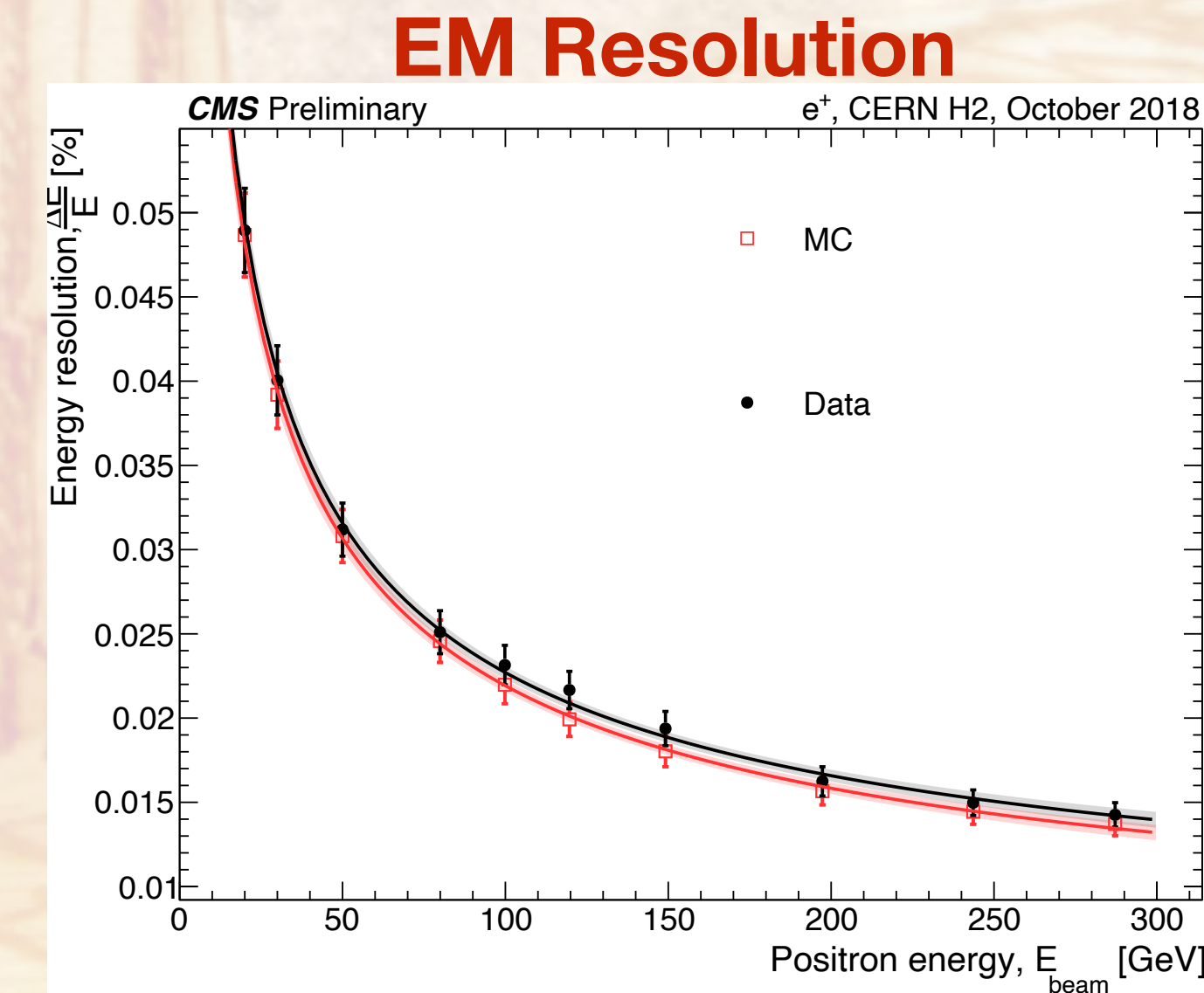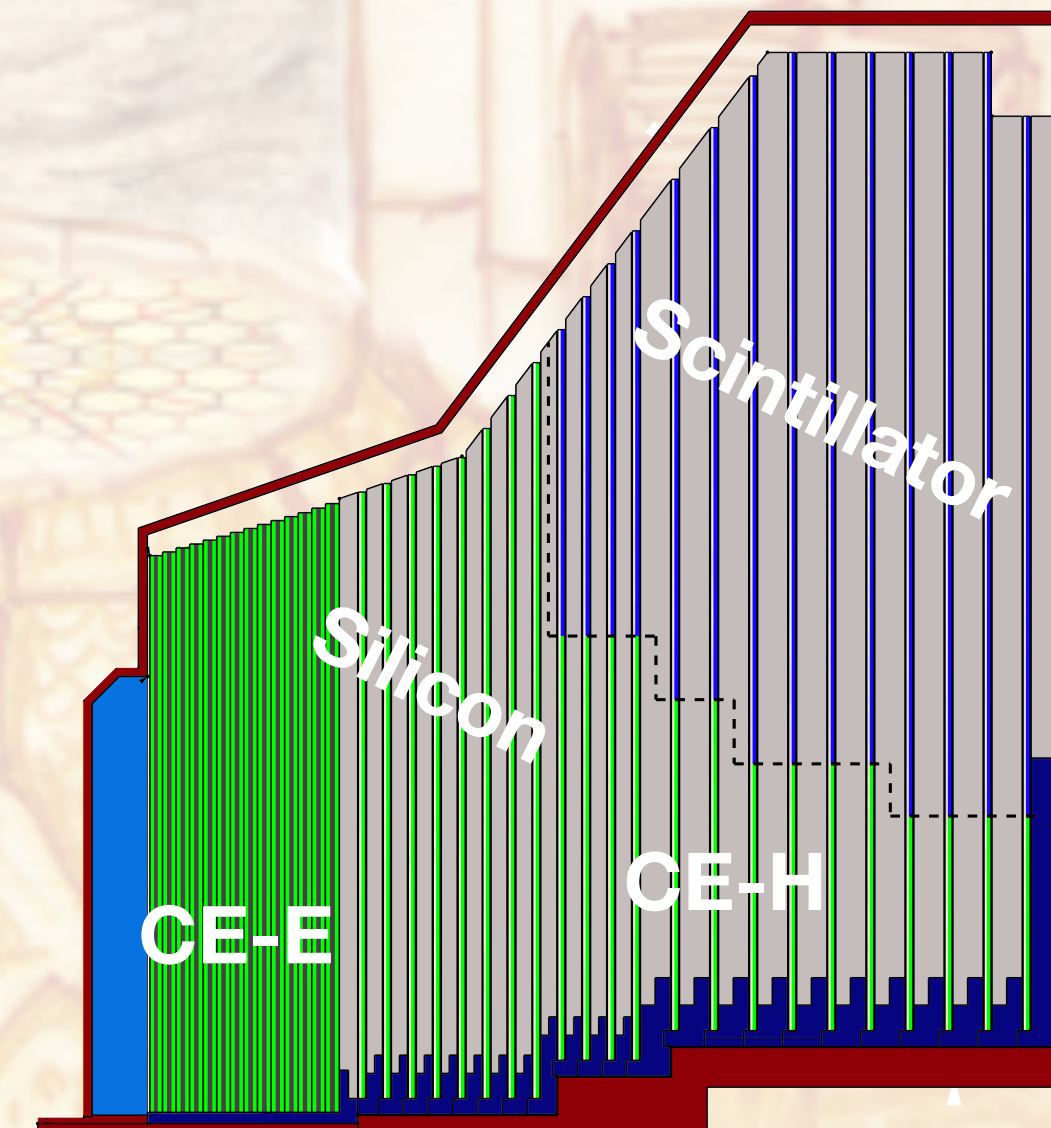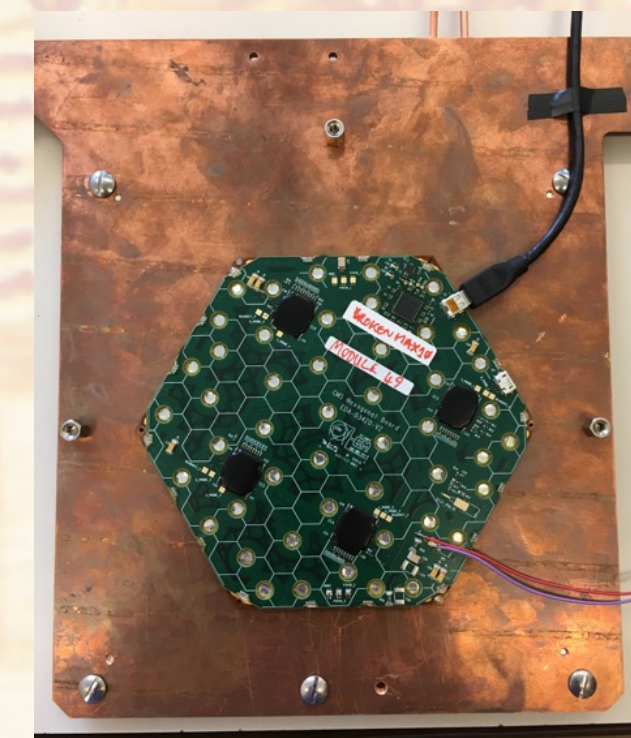# Characterisation of EM showers in CMS High-Granularity Calorimeter with beam test data

⊙ The current endcaps calorimeters of CMS are going to be replaced by High-Granularity Calorimeters (**HGCAL**)

⊙ HGCAL is a **5D calorimeter:** x, y, z, E, t

  ‣ Imaging calorimeter with high discrimination power!

⊙ **In this mini-stage:**

  ‣ **You** can work on real beam test data from the **first large scale prototype of HGCAL**;

  ‣ Reconstruct EM showers in the calorimeter and discriminate $e^{\pm}$ from $\pi^{\pm}$;

  ‣ Measure EM energy resolution;

  ‣ Measure longitudinal and transverse shower profiles;

  ‣ Study of a detailed simulation of HGCAL and comparison with beam test Data.

EM Resolution

Silicon Module

HGCAL is a 5D calorimeter: EM shower reconstruction and identification!