

# What do we know so far

- Large modification of jet yields
  - Jet RAA = 0.4-0.5 ( $R \leq 0.5$ )
  - Large energy imbalance  $A_J$

Suggests **significant out-of-cone radiation**  
**Most likely at low  $p_T$**  (CMS measurements)

How do we move forward?

- Need to get a handle on the radiation
- Characterise angles,  $p_T$ s, set limits?
- Can we *convince ourselves* that we know 'where the radiation goes'?

# What do we know so far II

- ‘Small’ modifications of remaining jet structure
  - Fragmentation function mods look modest
  - Some excess at large  $R$  within jet, but looks modest as well...

NB: maybe the ‘small’ modifications are all of the story?

Can we get a more mechanistic picture of how these things hang together?

# How do we go after (possible) soft large angle radiation

The obvious suggestions:

- Measure jet spectra with larger  $R$
- Radial profiles in jet with large  $R$

Experimentally **extremely challenging** (or impossible?)

- Can we get guidance from MC/models how promising this is?
- What  $R$  would we need?

## **Other possibilities?**

- CMS momentum balance observable; how sensitive is it?
- Is it possible to measure radiation outside a jet cone?  
(reconstruct jet with small  $R$  and look outside it;  
some induced correlation biases...)

Each of these is a major (experimental) effort

**First look in models?**