Looking for dark matter mediators

an ATLAS poster teaser talk

Eric Edward Corrigan

ATLAS EXPERIMENT

LUND UNIVERSITY

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DM and simplified models

80% of the matter content of the universe is dark. Understanding is one of our **biggest current challenges**.

Colliders searches are an important part!

❖ if DM interacts with SM, could **produce at LHC**

❖ use **simplified** models for that interaction, such as **mediation by new vector boson**
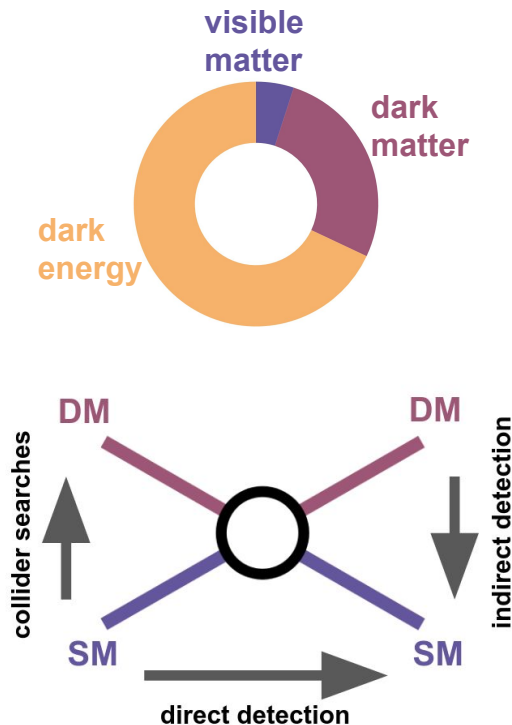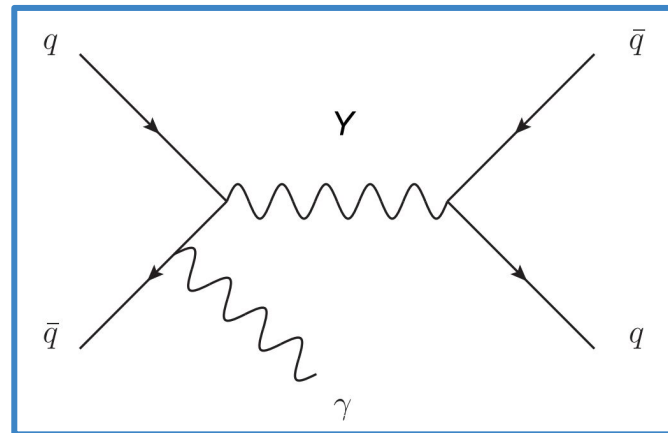
probing low mediator masses

Looking for **low-mass mediators** to **in final states with jets** is quite tricky, since the LHC is a hadron collider

       => **huge multijet QCD background**
   especially at low dijet invariant mass

If we want to look for light mediators, we need a way to **reduce event rates to manageable levels**

reinterpretation

If we don't find new physics, **we want to figure out what we excluded.**
Visualize uncovered phase space and summarize ATLAS efforts in **summary plots**

But each analysis can assume **different** scenarios, models and parameter spaces.
=> results need to be **reinterpreted** into a common model space.
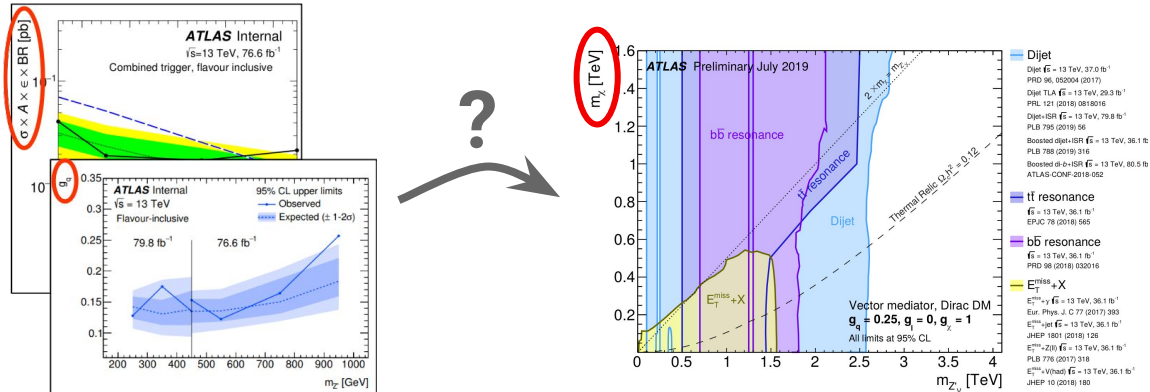
all shall be revealed

The answers to these fascinating mysteries, and many more: available only* at my poster!

See you there!

* may in fact also be available elsewhere