

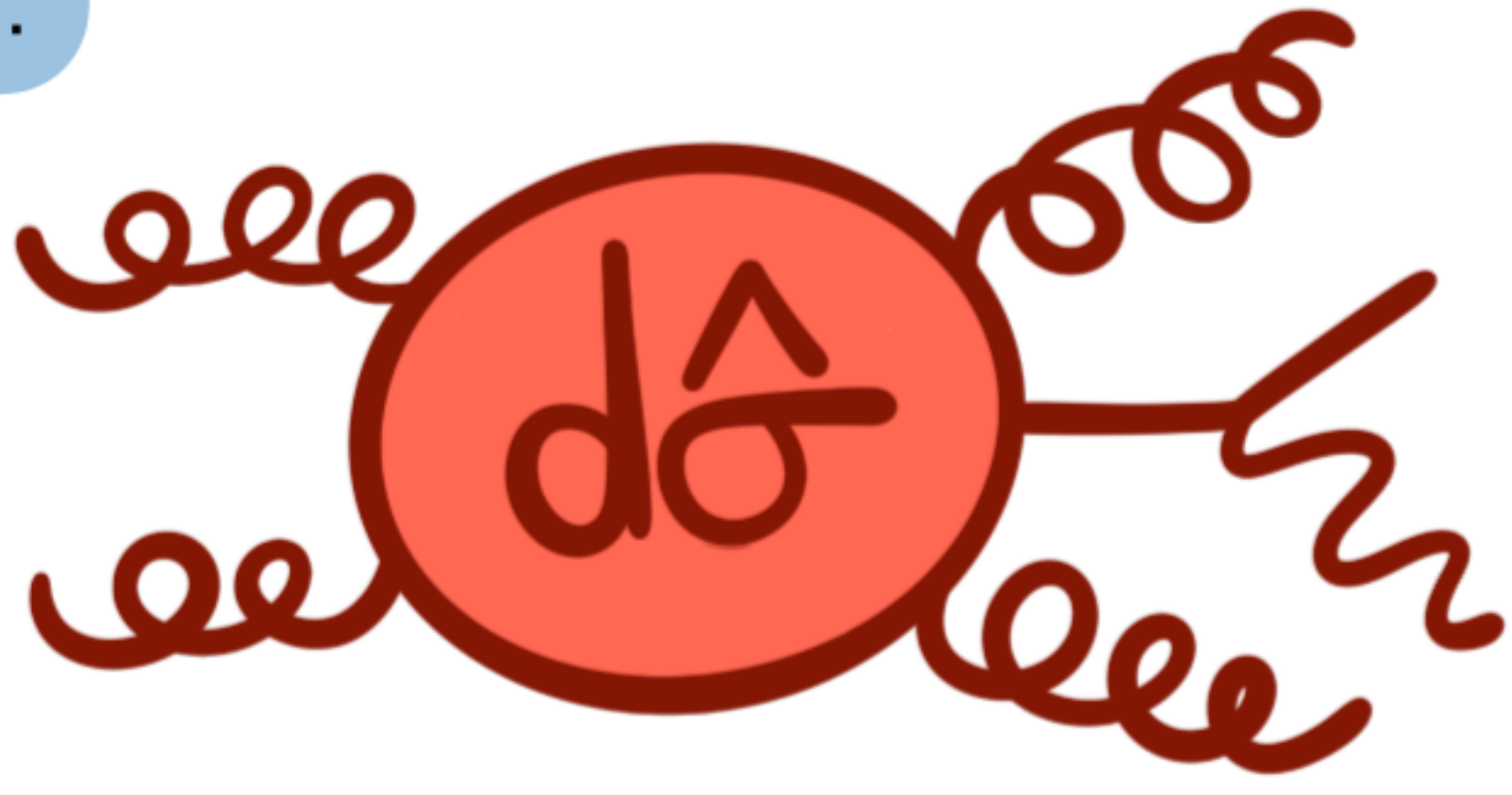
# DOWN THE QCD RABBIT HOLE

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One day, Alice fell inside a QCD book...



A strange rabbit welcomed her.

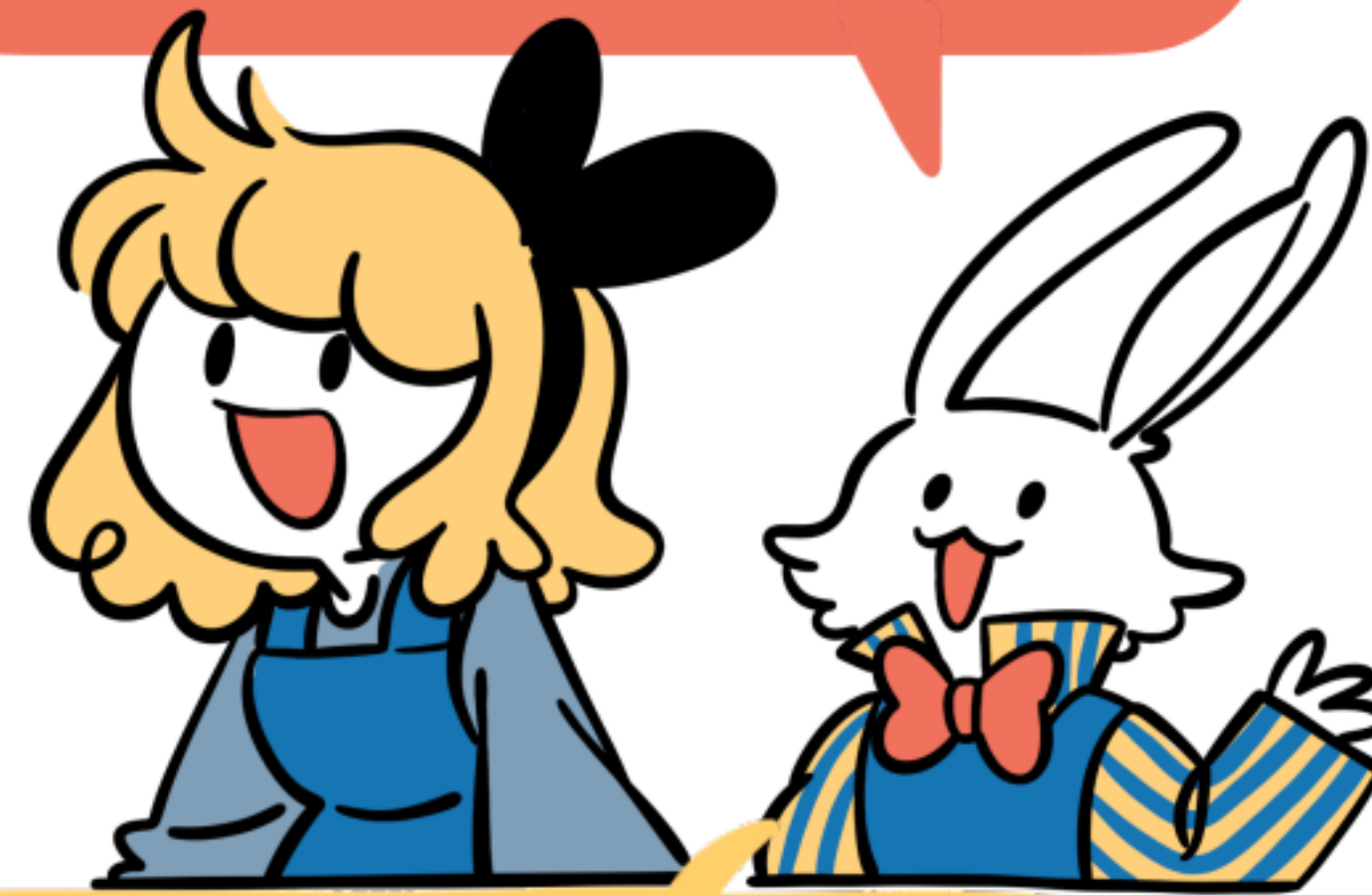


Particle colliders are microscopes into the world of elementary particles.

To make sense of the data we need to compare against theoretical predictions.



I'm late, I'm late, I'm late!  
There's a collision,  
you can't miss it!



Welcome to QCD land!

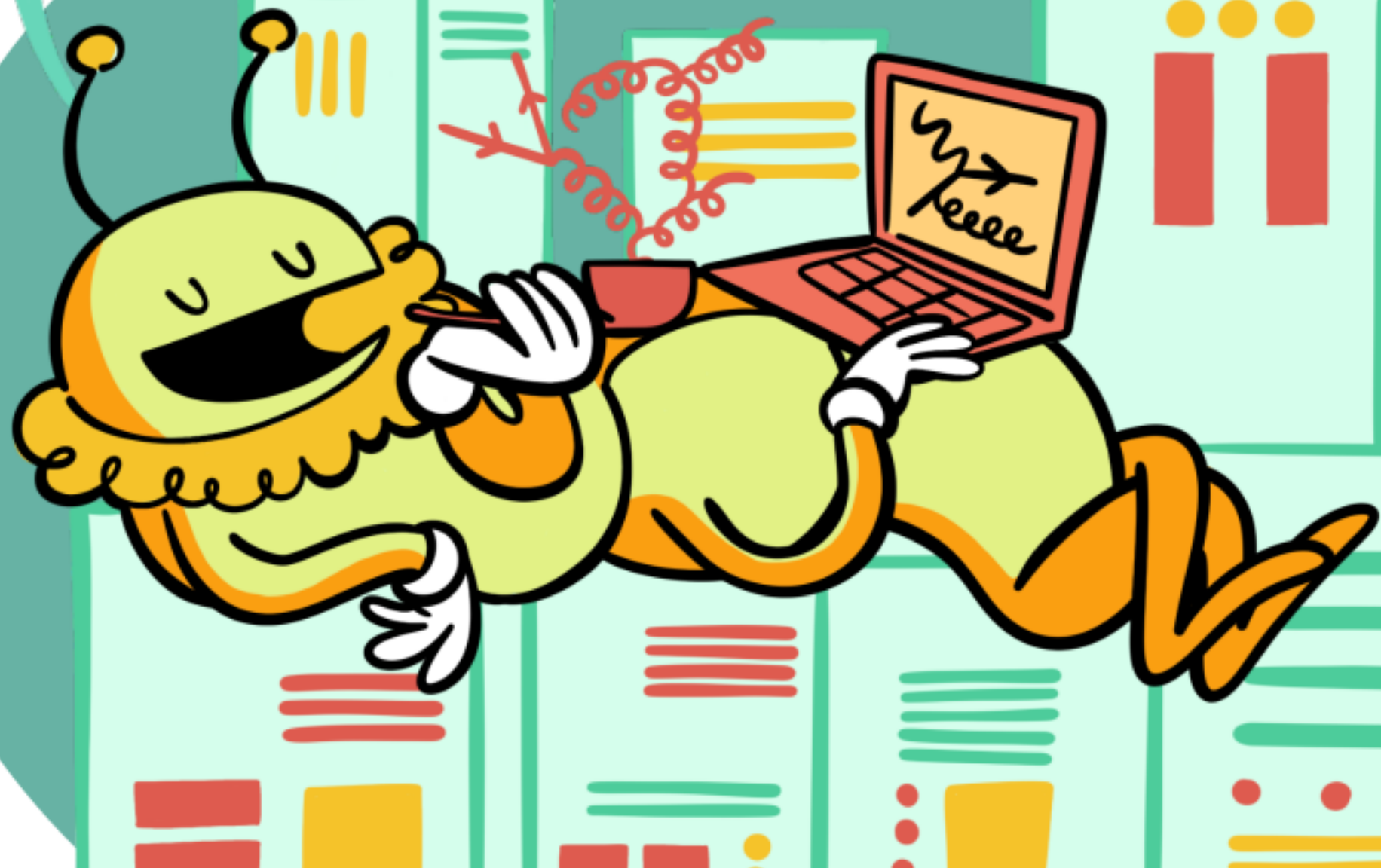
I'll show you the people working here.

Don't worry, Alice, you don't have to do all calculations by hand!

We use **computer algebra** to perform symbolic calculations that would be impossible on paper: Mathematica, FORM, Maple...

You can't say no to some tasty mathematics!

Theoretical predictions require mysterious **special functions**, some still to be discovered!



"Curiouser and curiouser!"

To reproduce the experimental setup, we rely on numerical simulations, in particular **Monte Carlo event generators**. In our group we develop **NNLOjet**.

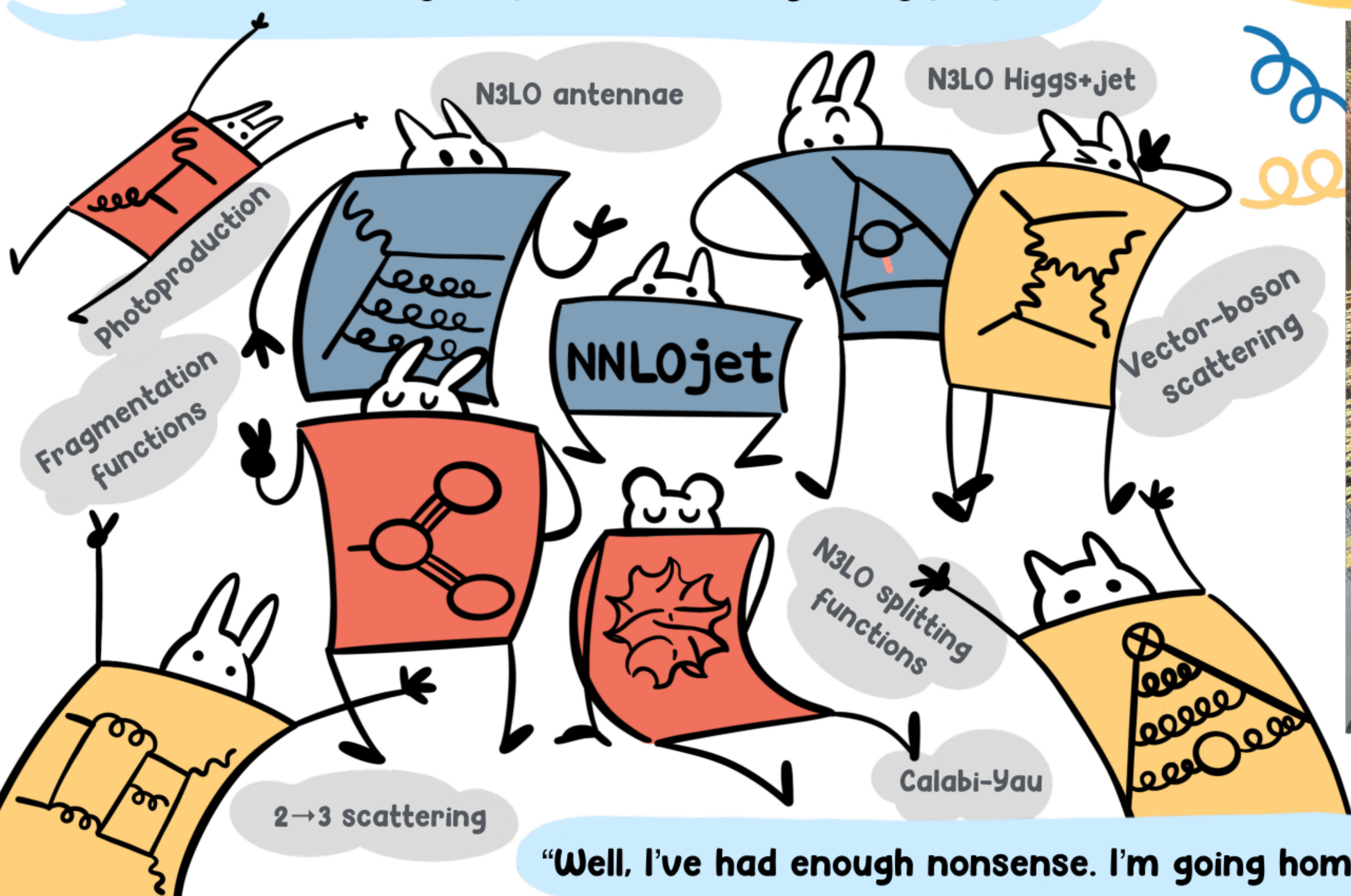
You should drink both!

Everything blows up! The ingredients are separately divergent but, thanks to **subtraction methods**, we can combine them into finite results. In our group we develop **Antenna subtraction**.



You can choose your favourite among many projects!

"It would be so nice if something made sense for a change!"



"Well, I've had enough nonsense. I'm going home!"



@qftoons