

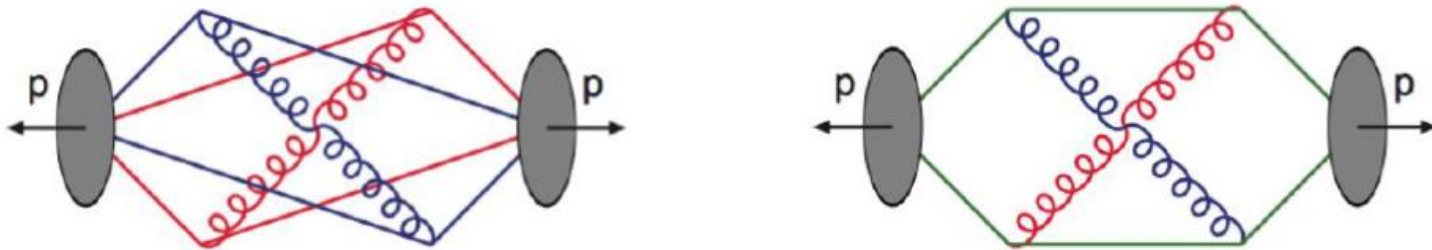


Wishlist part 2

- The wishes today focuses on understanding aspects of string/rope theory better

Wish: understand better CR and entropy

- For me it is not trivial that CR does not lower entropy



- Not a problem if CR is a correction, but needs to be considered if CR is an interaction
 - Likely not an issue, e.g., hydro in the final state also “reduce” N_{ch} in final state by producing pT
 - But it should be verified IMO



Wish: can we have long range CR?

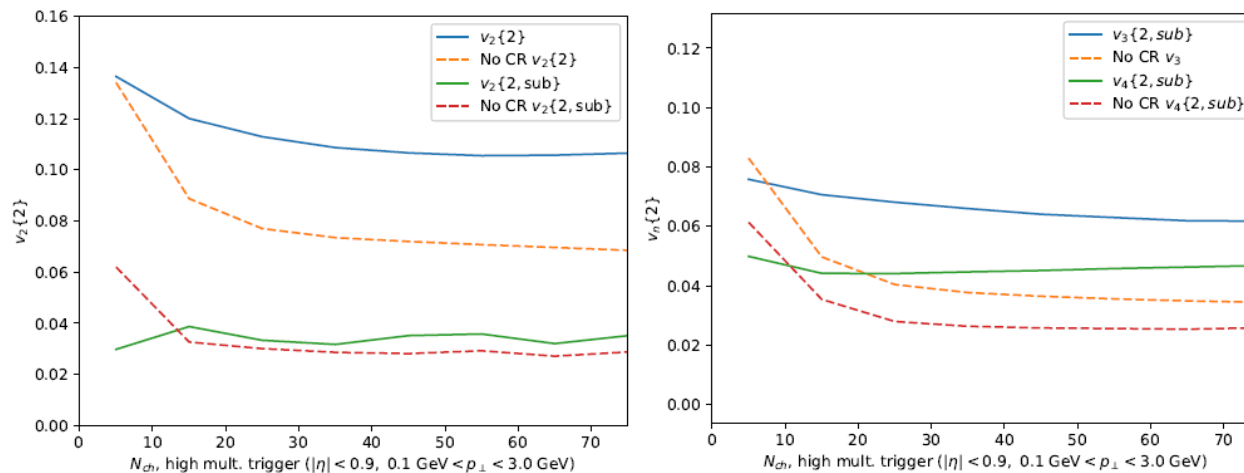
(1/2)

The role of Colour Reconnection and non-flow

CR = reshuffling string configurations (See also: T. Sjöstrand, QM18).

Quantifying its contribution

- Introduces "flow-like" effects (Velasquez *et al.* PRL 111 (2013) 042001).
- Remove the "like", or is it "non-flow"? (CB, V. Pacík, Y. Zhou, in prep.)



(pp at $\sqrt{s} = 13 \text{ TeV}$, $v_2 : \Delta\eta > 1.4$, $v_{3,4} : \Delta\eta > 1.0$)

Contribution to $v_2\{2\}$ disappears: **CR not long range.**

Coefficients are ordered $v_2 > v_3 > v_4$.



Wish: can we have long range CR? (2/2)

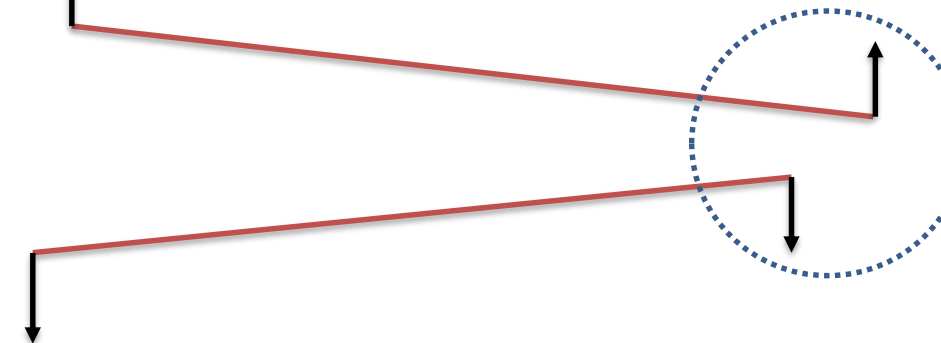
- But is it possible to come up with other CR schemes that are long range?
 - This would be truly non-QGP physics

- Idea

Before



After



i.e. we are looking for a local interaction that can give long range effects



Wish: does interacting strings thermalize?

- When we start to add string interactions then one would expect that at some point the system would thermalize
 - Could effect be large for non-perturbative (multi-gluon) interactions?
 - For a thermalized system one would expect QGP to be the correct QCD description

