How many interactions does it take to modify a jet?

And is that the whole story?

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What is going on in small systems?

🎇 What is happening in small systems such that jets are not significantly quenched but are still modified to the point that final state particle distributions show signs of collective behavior?

🎇 Is it possible that a substantial v_2 is established with a smaller number of jet-medium interactions than that required for a visible R_{AA} signal?
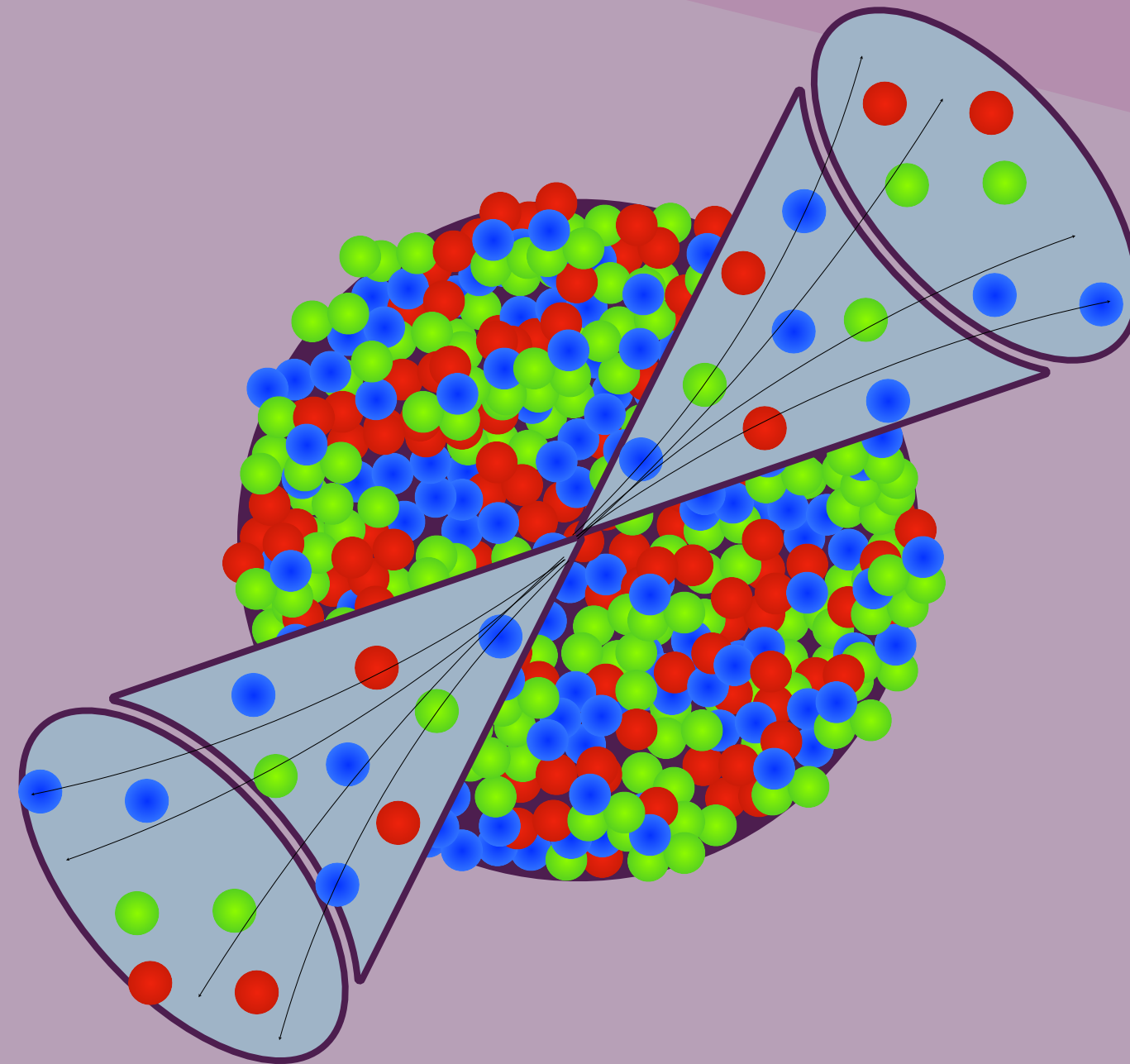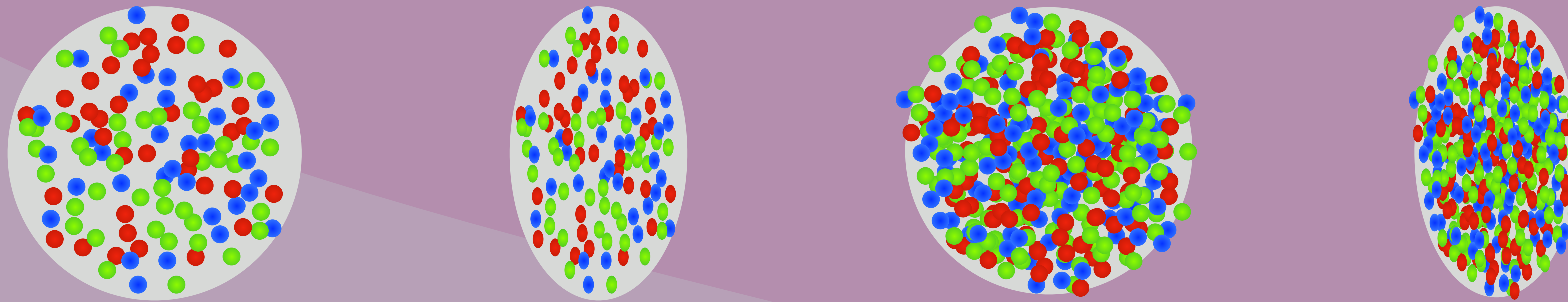
JEWEL jets in a brick-like medium

🎇 Define a brick-like medium in JEWEL with a given density, temperature and geometry
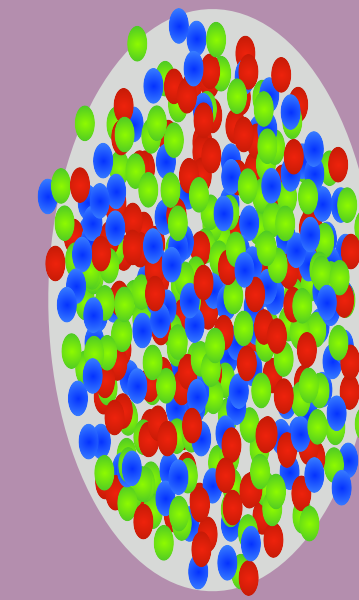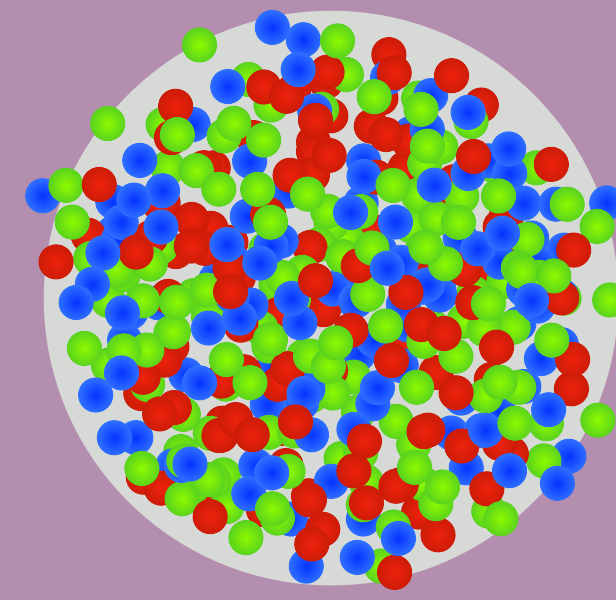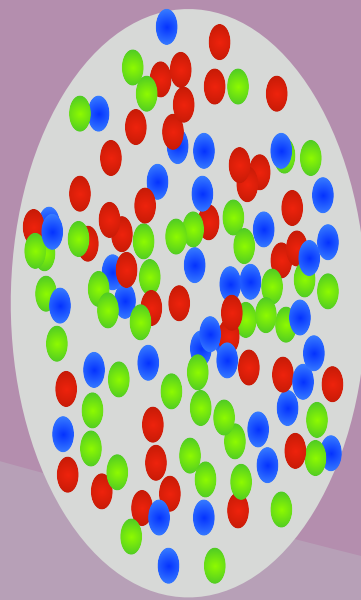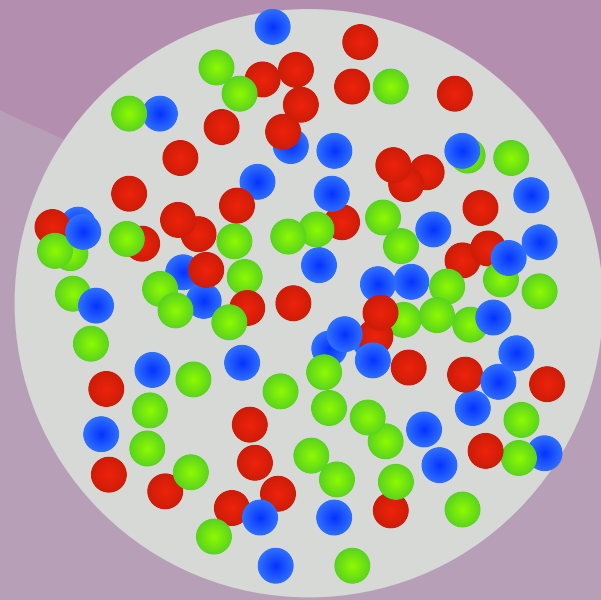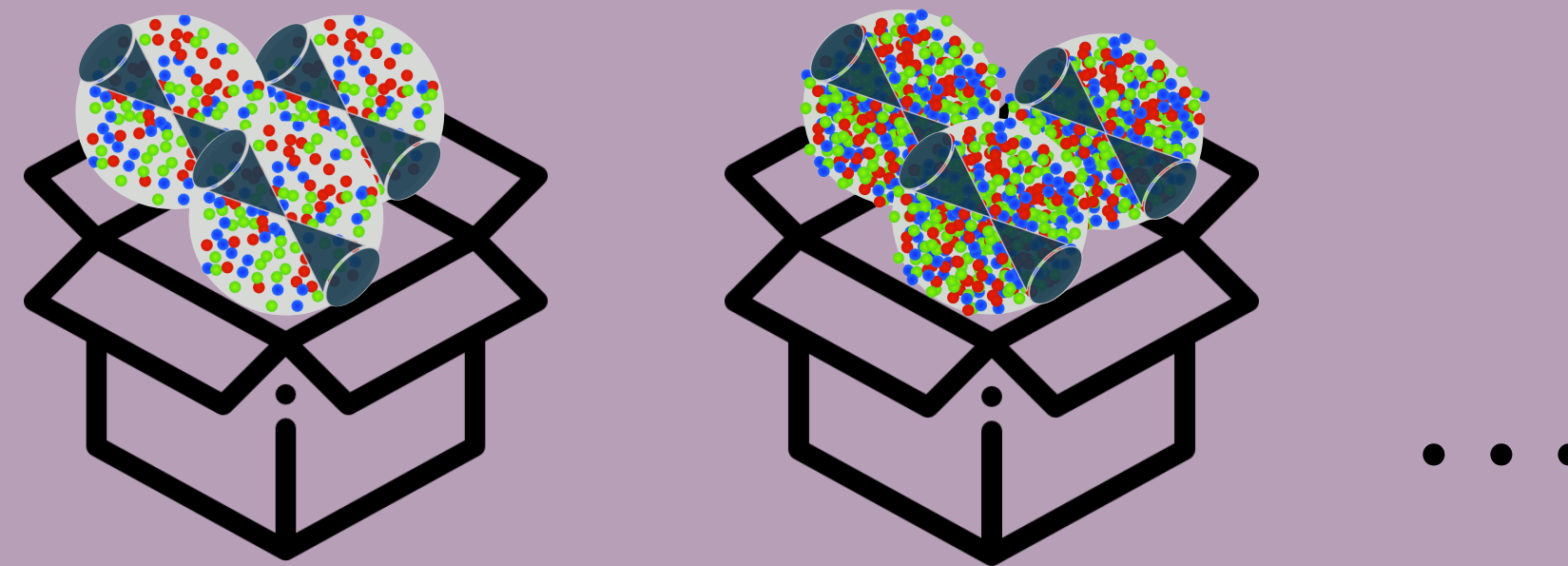
JEWEL jets in a brick-like medium

🎇 Define a brick-like medium in JEWEL with a given density, temperature and geometry

🎇 Let jets evolve inside the brick while counting the number of jet-medium interactions
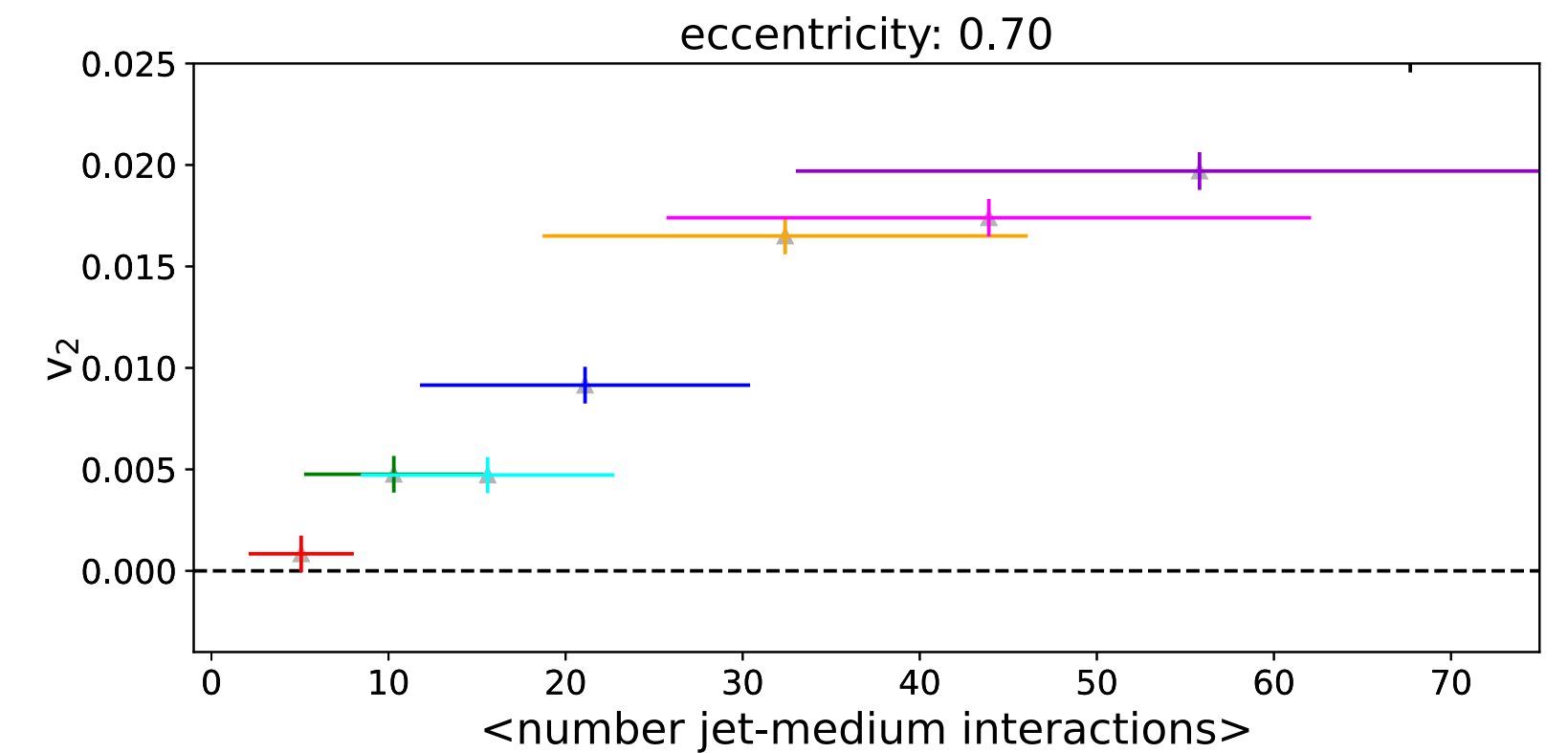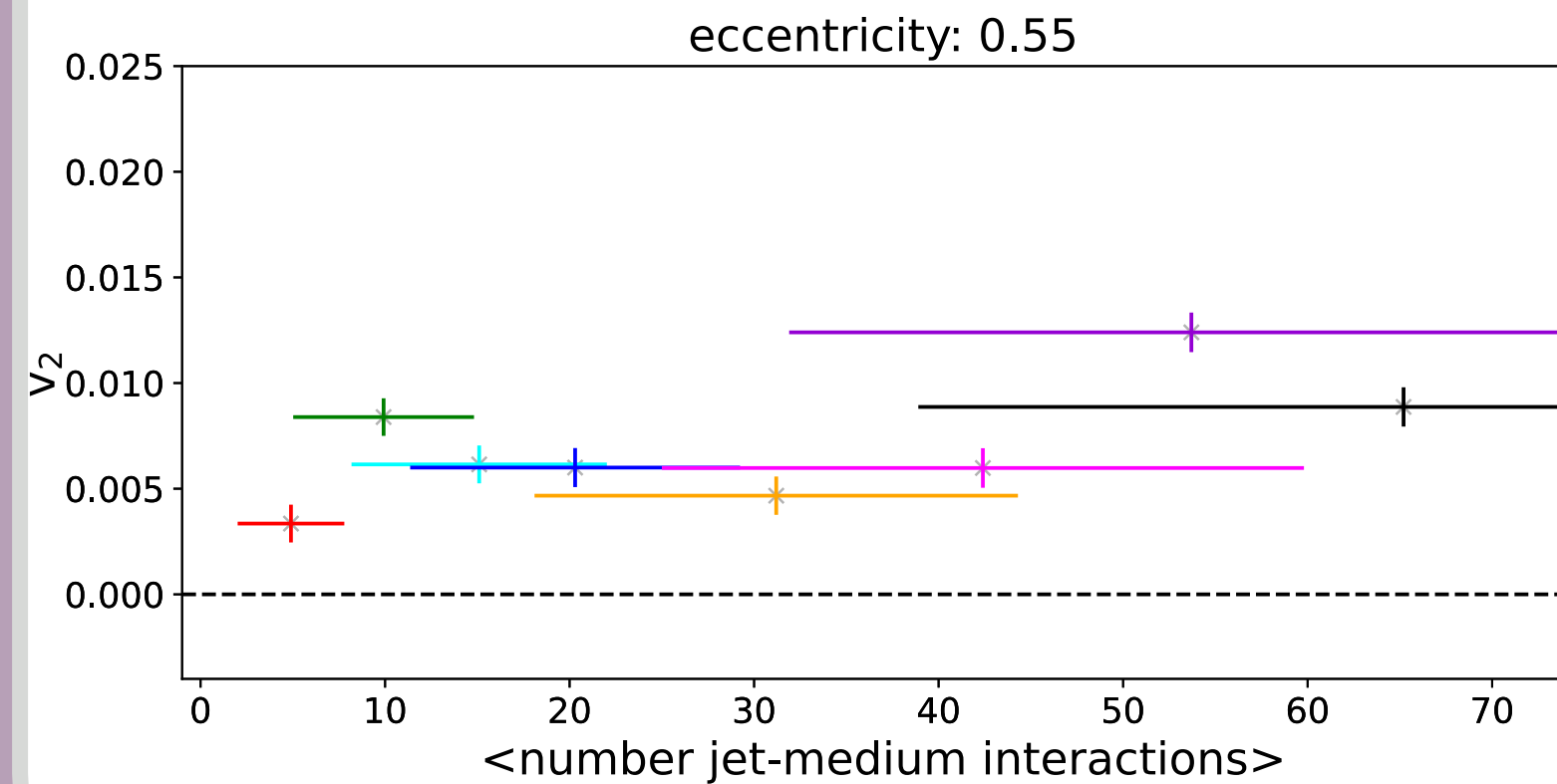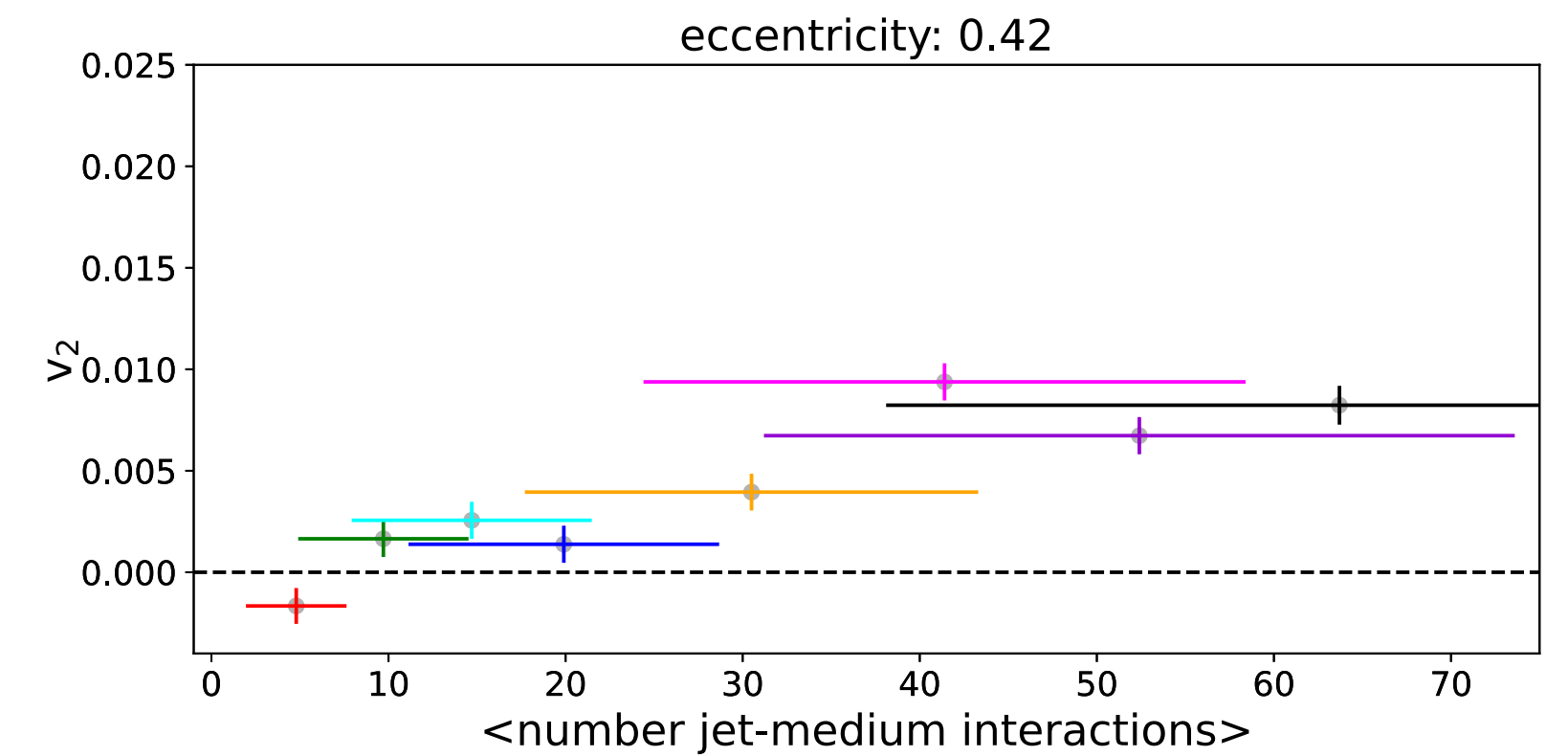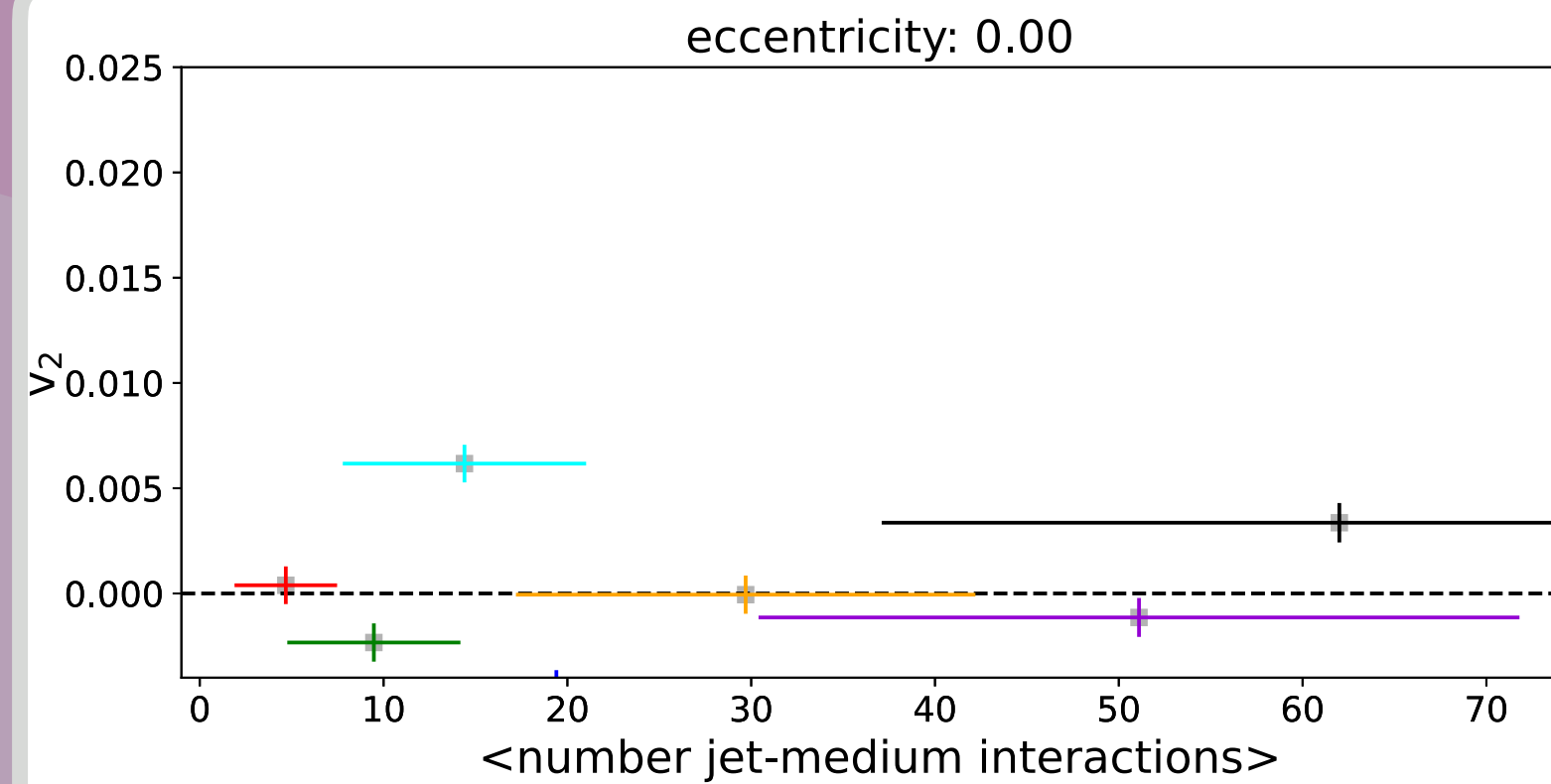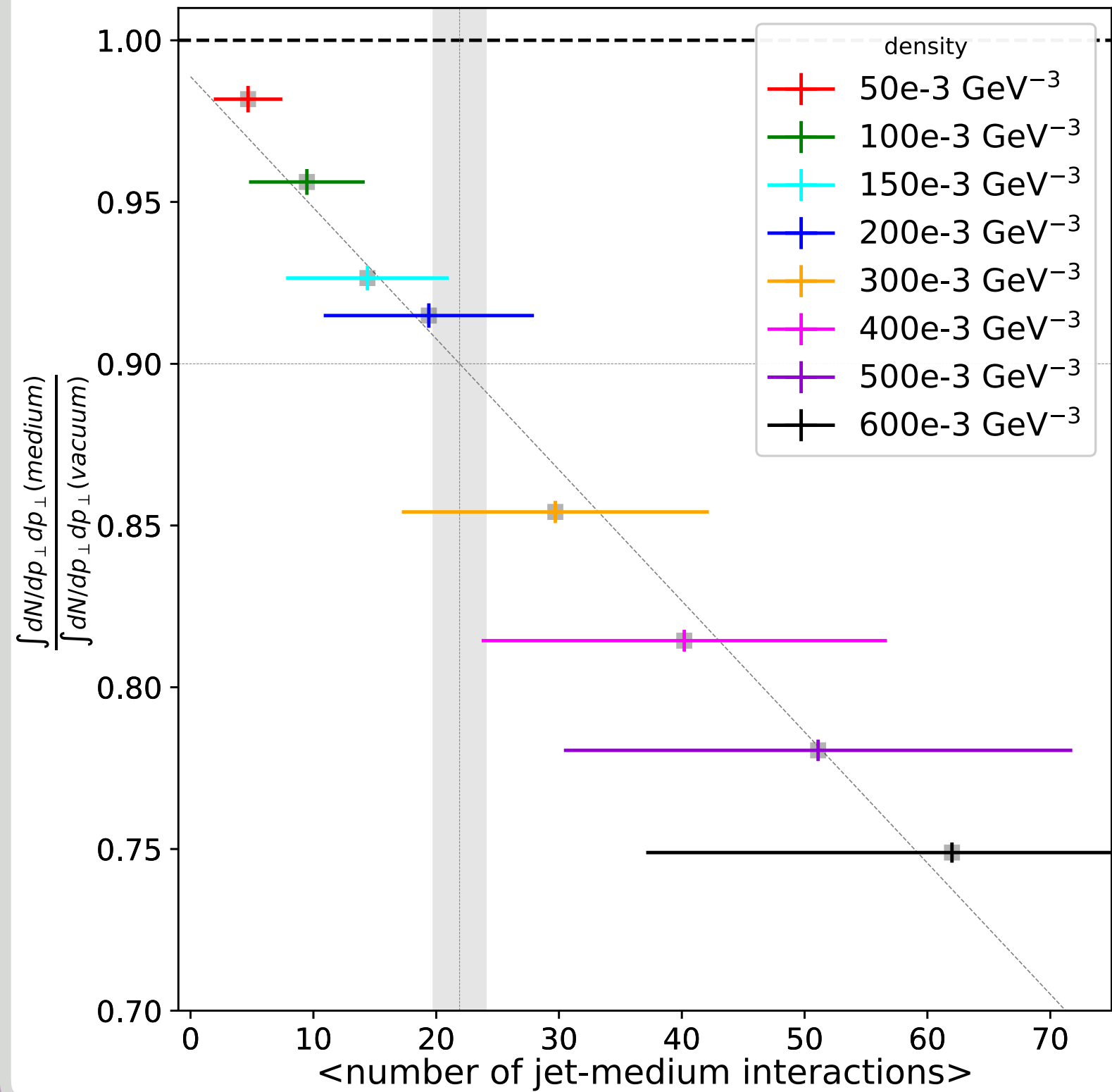
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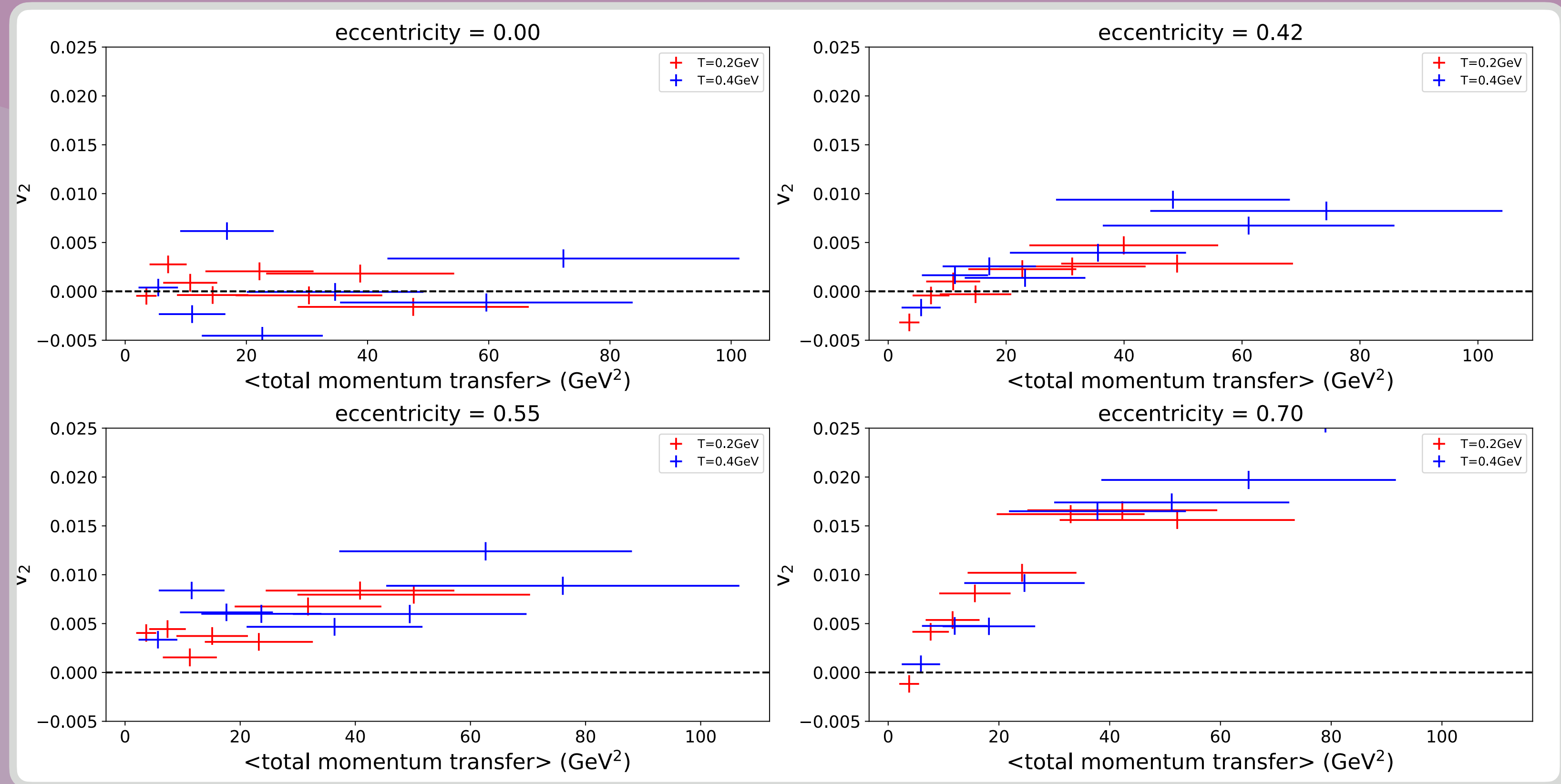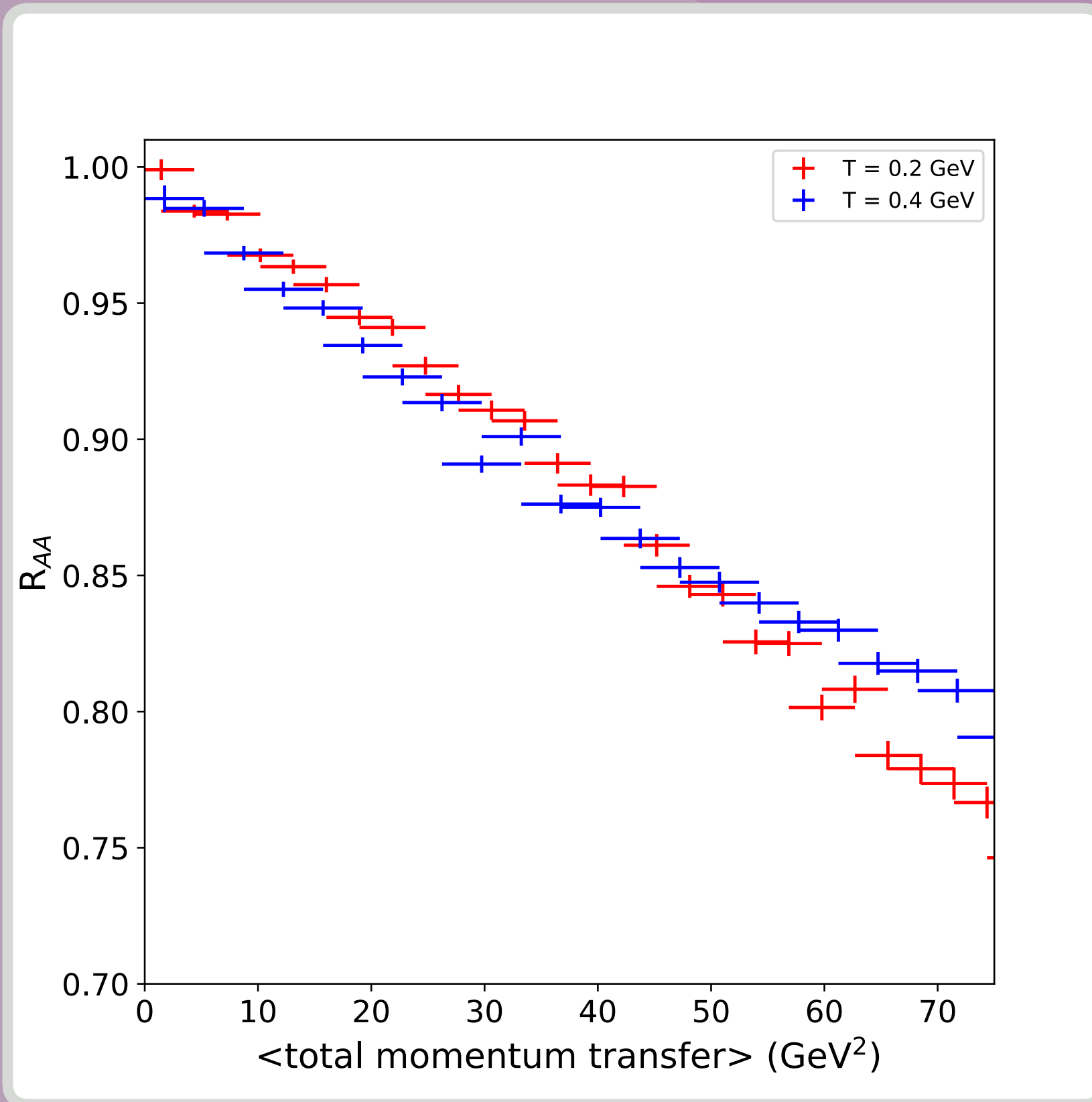interactions

6-10
interactions

...

And the answer is…

🎇 At about 20 interactions, a 10% effect in R_{AA} is observed

🎇 v_2 can be seen well before that in certain eccentricities

But that is not all!

🔭 At different screening masses, the number of interactions changes

🔭 R_{AA} and v_2 scale with total momentum transfer

What next?

🎇 Improved method to select on number of jet-medium interactions avoiding selection biases

🎇 Understand how deflection angle and momentum transfer separately affect the v_2 signal

🎇 Compare our results with a more realistic medium model

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Thank you!