



Brandeis
UNIVERSITY



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Resummation Benchmarking Discussion

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Where are we with the paper inputs?

- This is what is available on git:
 - Please let me know if I missed something!

Codes	L1	L2	L3	ATLAS data	Appendix
Cute-MCFM	✓	✓	✓	To do	✓
Radish	✓	☑ -> But no breakdown of uncertainties yet on git	☑ -> But no breakdown of uncertainties yet on git	To do	To do
SCETLib	✓	✓	✓	To do	To do
DYTurbo	✓	To do	To do	To do	To do
NangaParbat	✓	To do	To do	To do	To do
Artemide	☑ -> the previous benchmarking setup is lost	-	-	-	-

Discussion

- Can we submit the paper by the end of the year?
- Propose to set a hard deadline otherwise we will never converge and really doesn't make sense at this point to delay the paper to next year
- An aggressive timeline example:
 - Let's agree to submit the paper by December 1st this year (the exact date doesn't matter but has to be this year)
 - By October 15th the groups complete the table in slide 1 **including writing the appendices**. If an individual group is not ready by then we need to understand the reason and if the group thinks they can make it or possibly will not appear in the paper
 - By November 15th all the paper results are generated and discussed. This work will start now as there is already a critical mass of L1/L2/L3 predictions and the results of the missing groups will be added as ready
 - The documentation of the relevant results sections are completed by December 1st and the paper is submitted
- Can we do this?

Discussion on nonperturbative treatment

- Explicitly added the treatment of nonperturbative effects to the resummation benchmarking setup in Section 3 of the paper:
 - For L1: Use a common "quadratic" b^* prescription (or its momentum-space equivalent) with $\Lambda = 1$ GeV:

$$\frac{b_0}{b^*} = \sqrt{\Lambda^2 + \frac{b_0^2}{b_T^2}}$$
 - For L2/L3: Everybody uses their own favorite b^* prescription, but explicit nonperturbative models stay turned off.
- Important to have a short section in the paper with a description of the missing uncertainties/effects
 - Nonperturbative, heavy flavor effects, etc.