Analysis of single-bunch instability rise times at top energy using the bunch-by- bunch ADT activity monitor data

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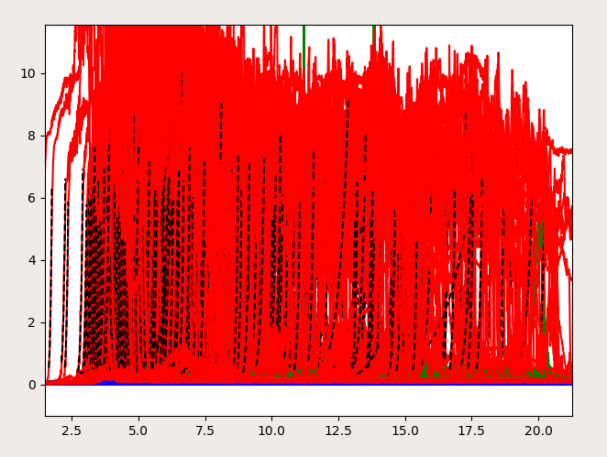
→ Different set of data coming from the ADT activity monitor have been analysed (from fill 6057 to 6411)

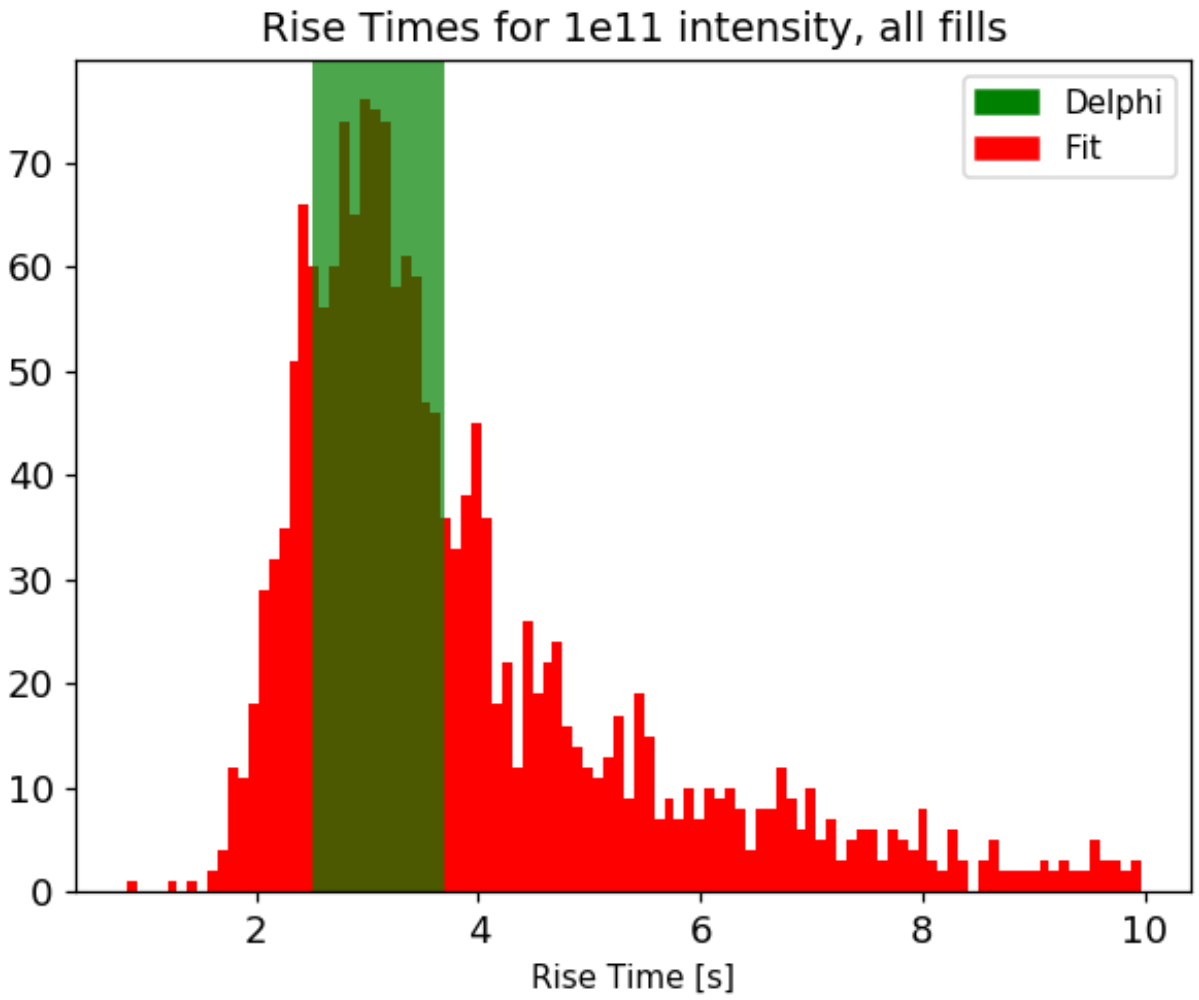
→ An exponential fit was performed on the transverse activity of every single unstable bunch



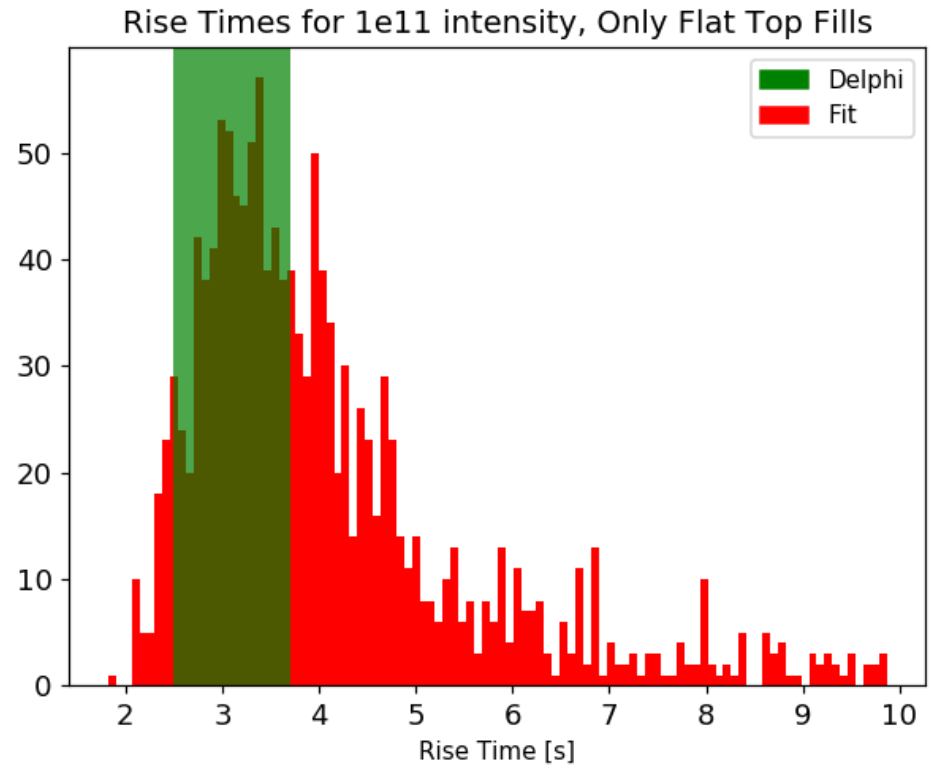
→ The rise time of every single bunch has been normalised by its intensity and then multiplied by 1e11

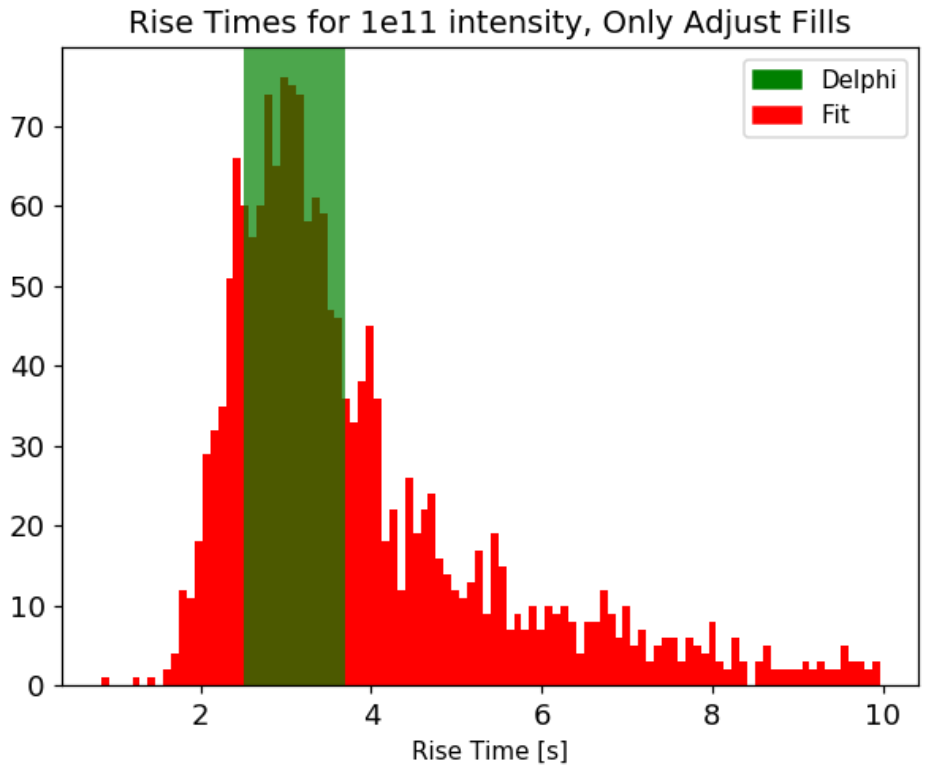
→ The results have been plotted in histograms

→ The information about the data can be found here: https://docs.google.com/spreadsheets/d/1xiPDCZ-y-WoaFInM8VASNwo7uIWWFwH_iJ257hrZMbQ/edit#gid=0

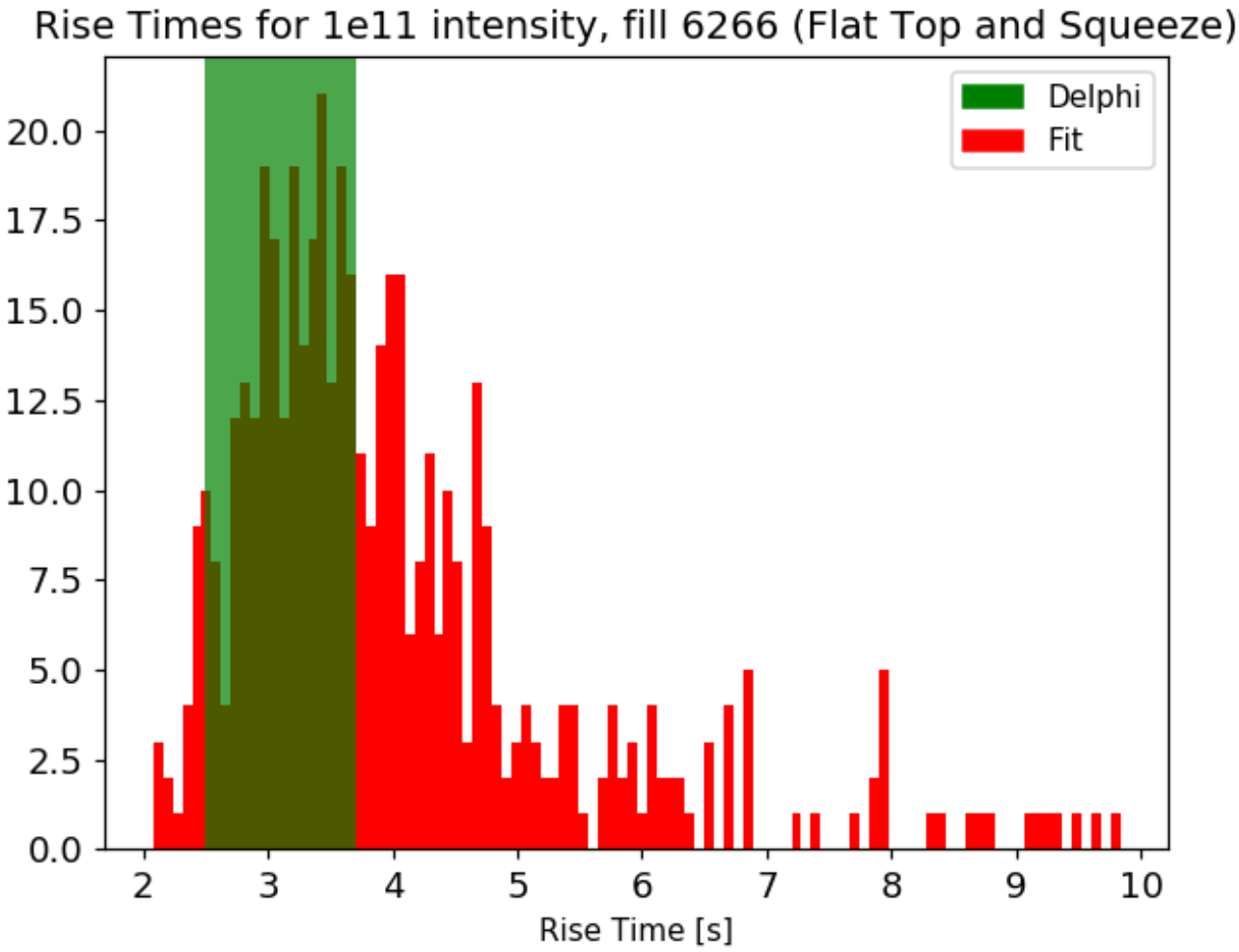


→ The biggest part of the rise times is between 2 and 4 seconds
→ The fitted rise times seem slightly higher in average than predicted with Delphi
→ Origin of the tails to be understood (bad fit, effect of octupoles, etc.)





→ As expected from theory there are just small differences between Adjust and Flat Top beam modes in terms of rise times, they are both contributing to the tails

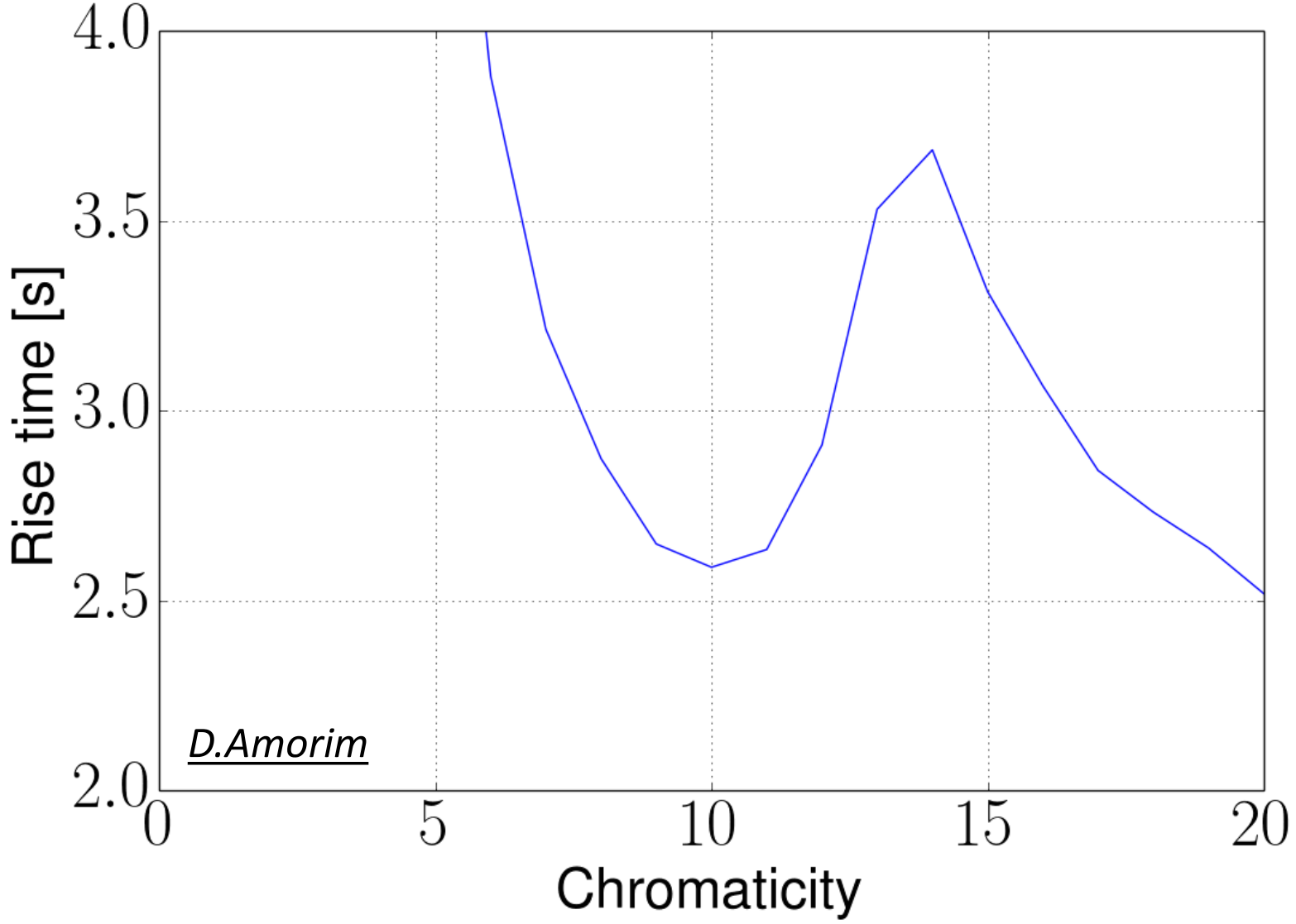


→ Fill 6266 is the biggest contributor in terms of unstable single bunches (almost 900)

→ By comparing this plot with the one with all the fills it is shown how the distribution in the histogram is not given just by fill 6266

THANKS

BACKUP



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