



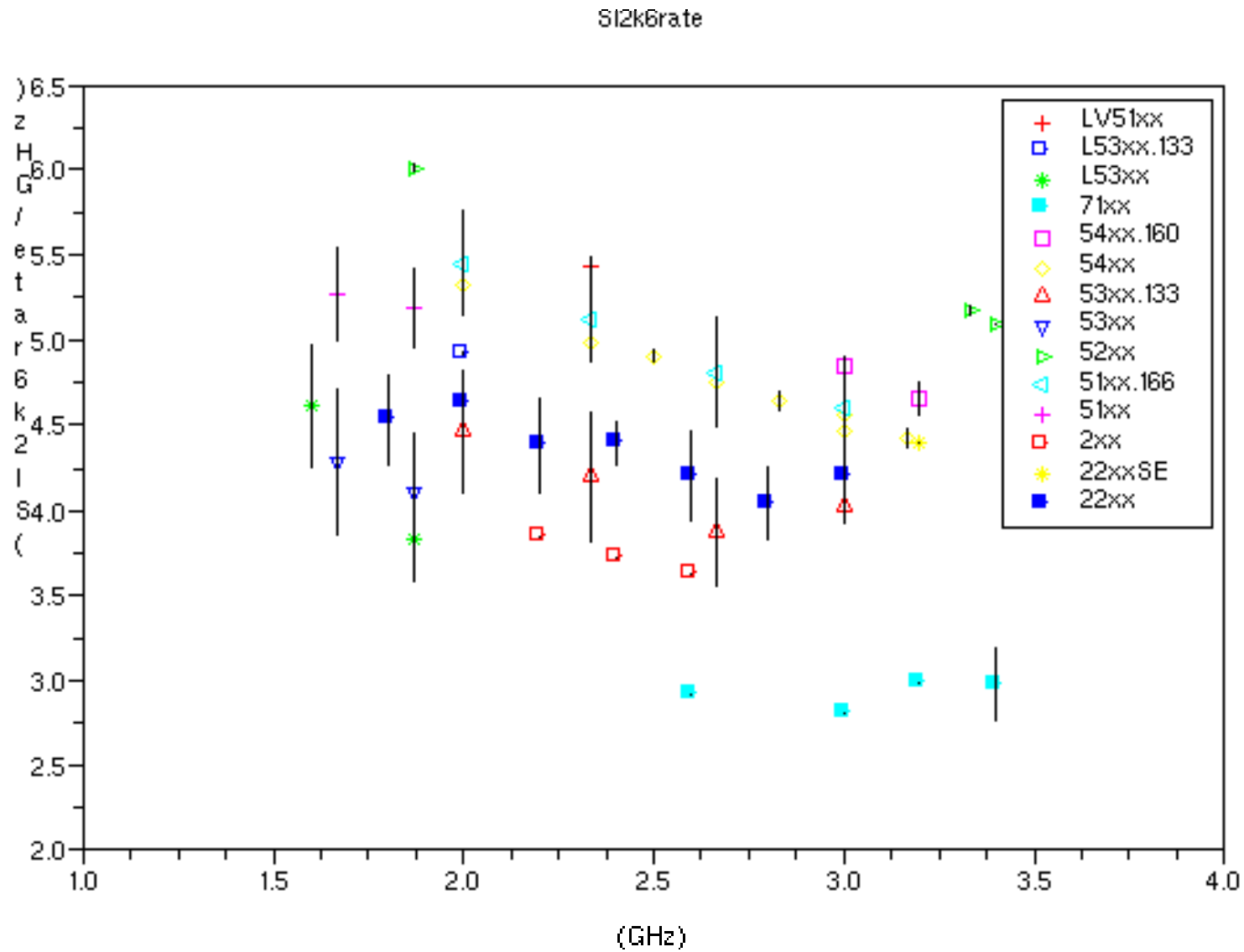
# Spec.org data

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- Collected all data available for SI2k6rate
  - > 2 core/CPU
  - dual CPU machines
- computed the averages of  $SI2k6rate/n\_core/clock\_freq(\text{GHz})$
- plotted the results vs. clock frequency
- all data for modern dual- and quad-CPU stay between 3.5 and 5.5  $SI2k6rate/\text{GHz}$  ( $4.5 \pm 22\%$ )



# Results plotted by frequency



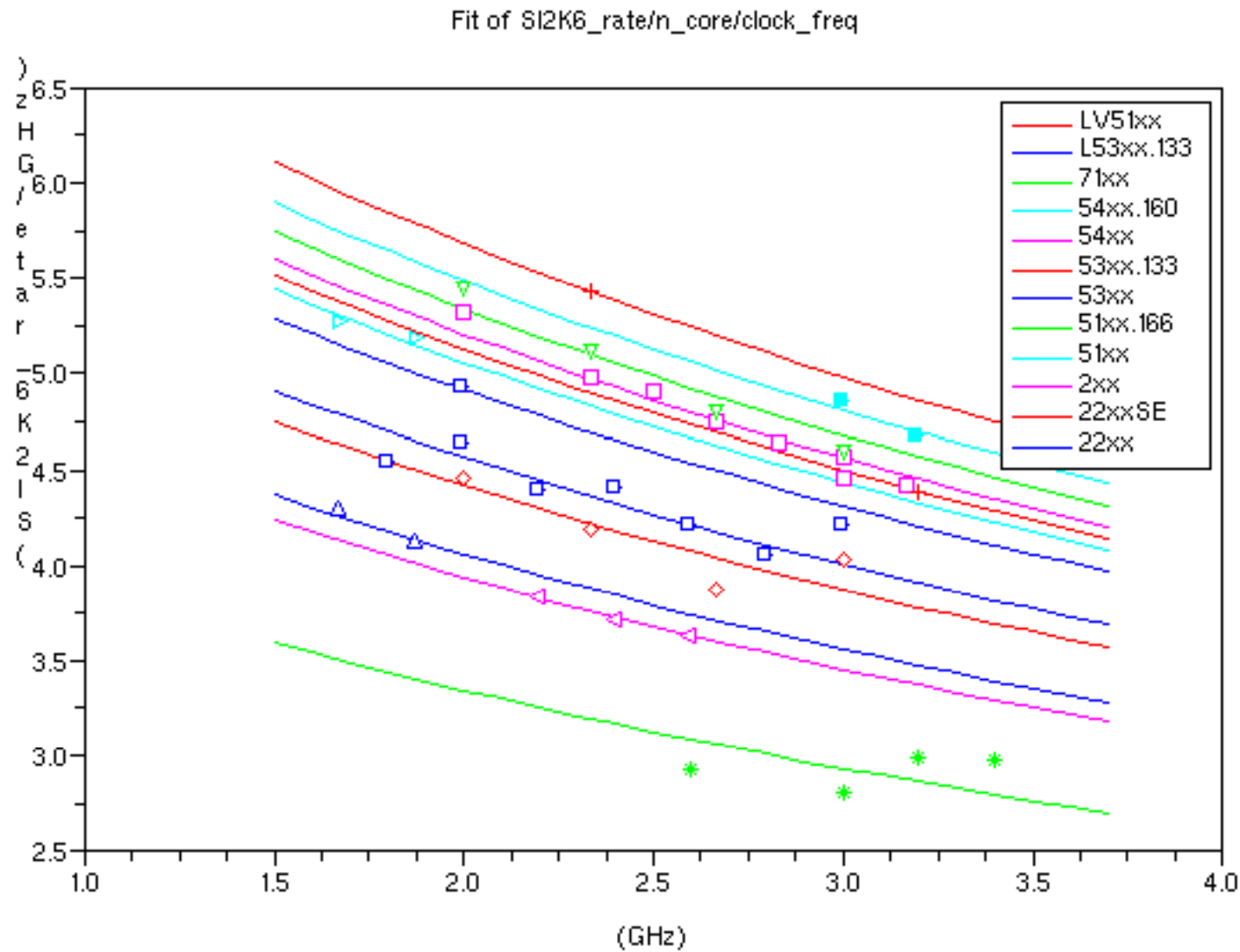
# scaling with frequency

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- data show that SI2k6rate don't really scale with clock frequency for a given CPU family
- simple model can fit the data pretty well:
  - $SI2k6rate/n\_core/clock\_freq = A/(1+B*clock\_freq)$
- fit good even with a constant term B for all CPU families (0.195 /GHz is the value obtained)
- the “A” term describes the relative performance of the various CPU families
- all data stay within the fitted curves within a few percent



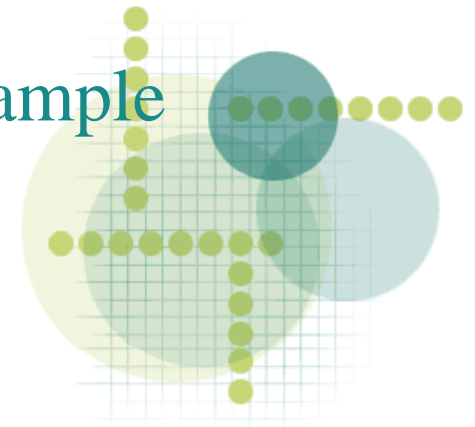
# Results of the fit



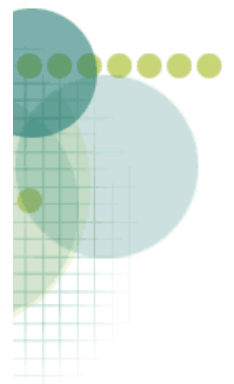
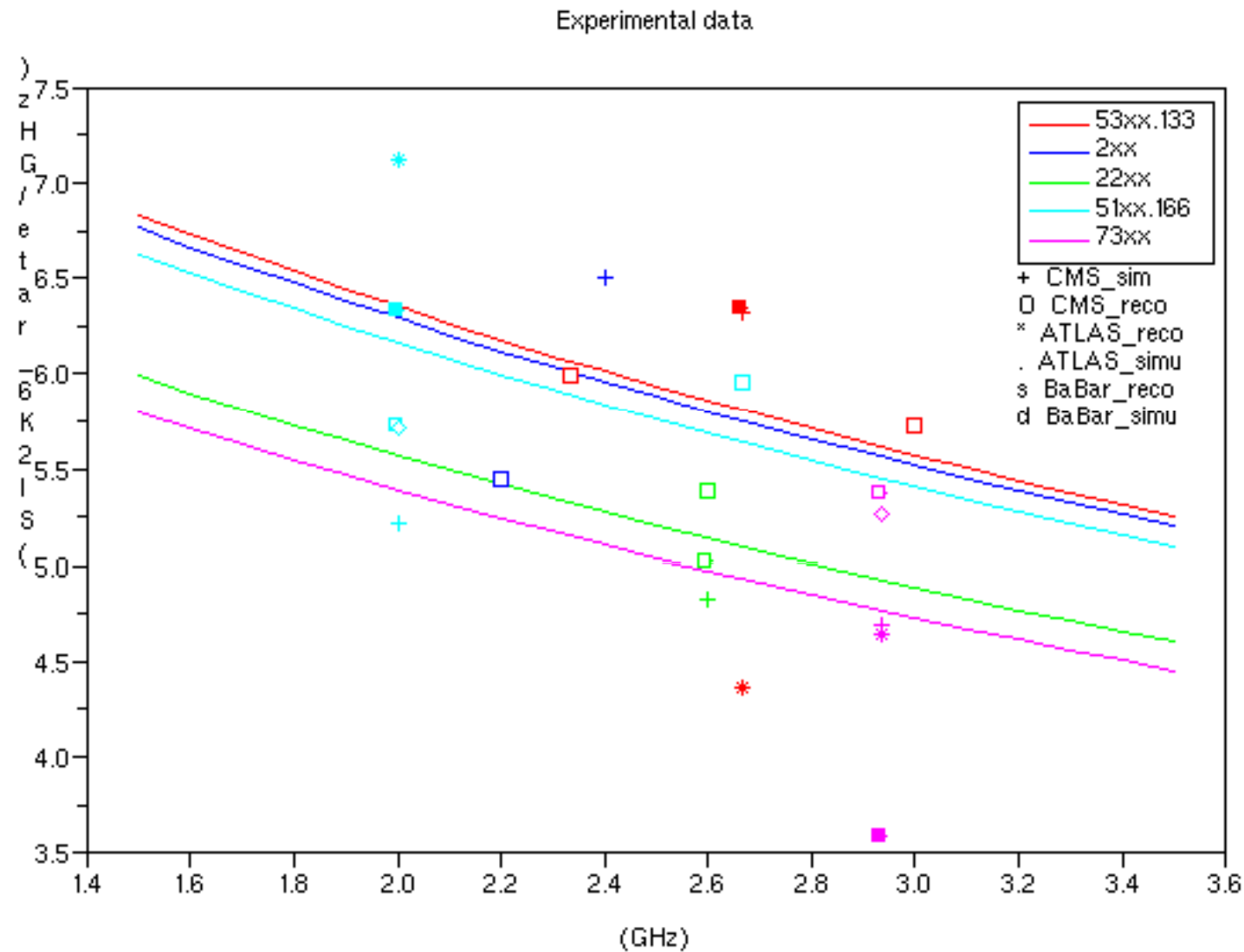
# How do

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- Using the same scaling model , data from real experiment applications have been analyzed
  - measurement taken at CNAF, Padova and Pisa
  - term “B” describing the relative decrease with frequency taken from previous fit
  - reconstruction and analysis code from BaBar, Atlas, CMS
- parameters fitted:
  - relative normalization factor for each data sample
  - “A” parameter for each CPU family



# Experiments data



# Comparison with SI2k6rate

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- Comparison of “A” parameter globally rescaled with results from fit of SI2k6rate shows no good agreement

## A parameter [perf./GHz]

from data	from SI2k6rate	difference
5,71	6,48	-11,9%
6,45	5,47	17,8%
6,31	7,42	-14,9%
6,51	6,48	0,4%
5,52	4,65	18,8%

