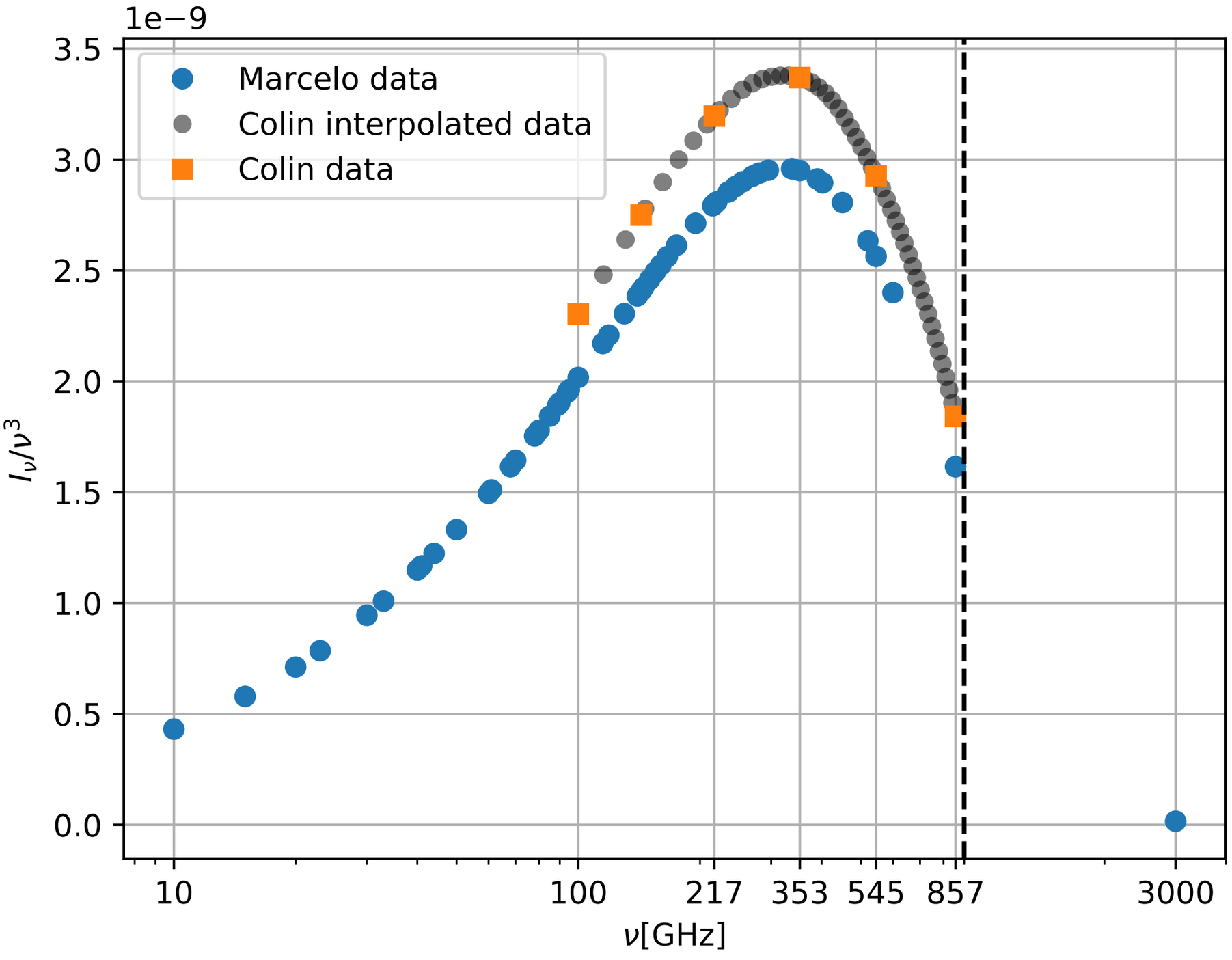
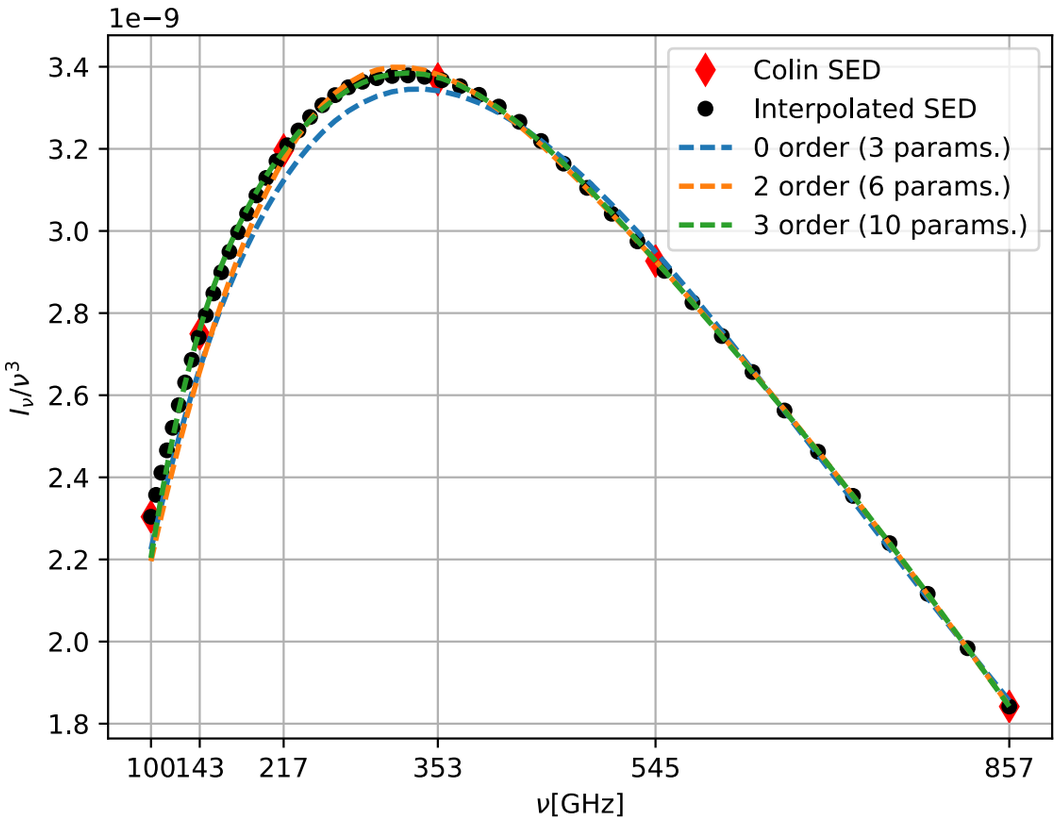
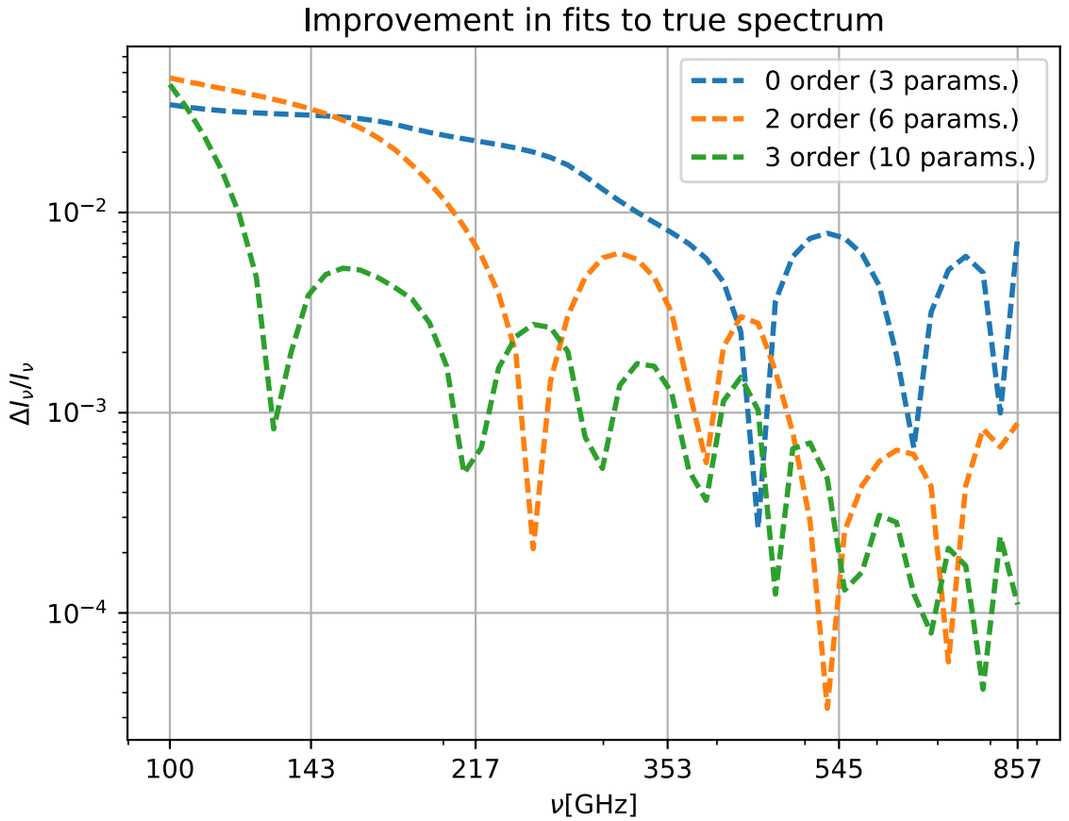
Intensity spectrum



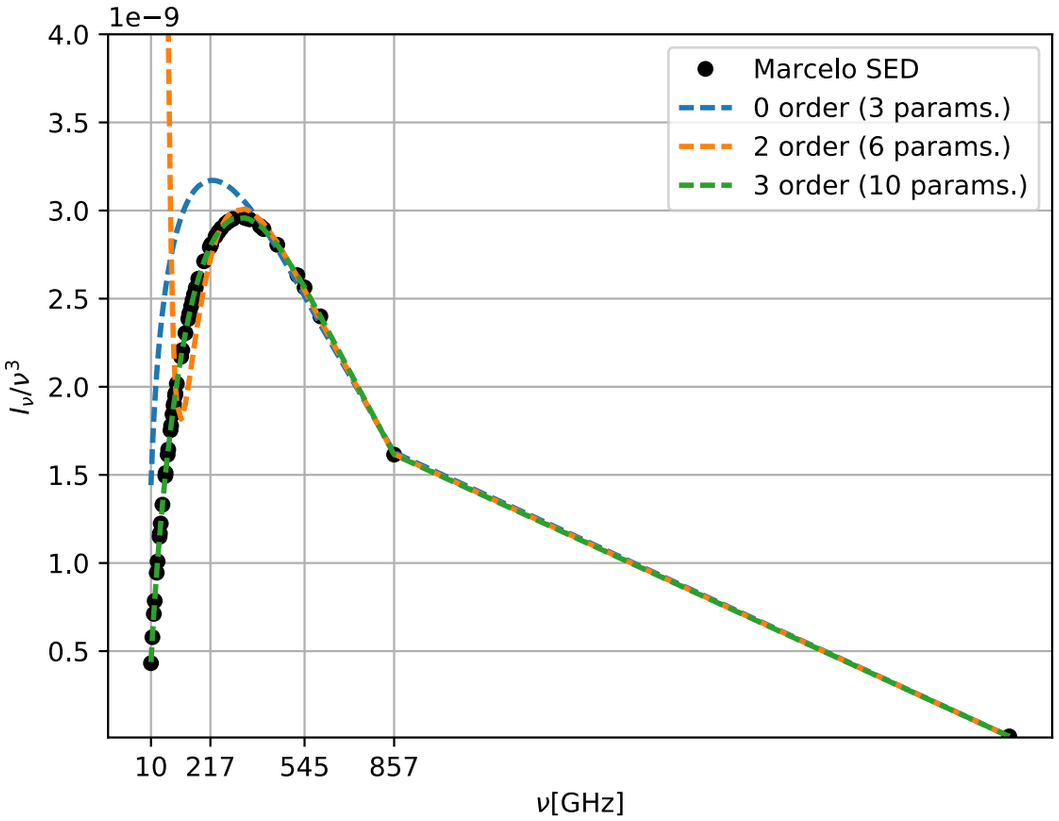
Fitting Intensity spectrum with Taylor moments
Colin's CIB monopole SED

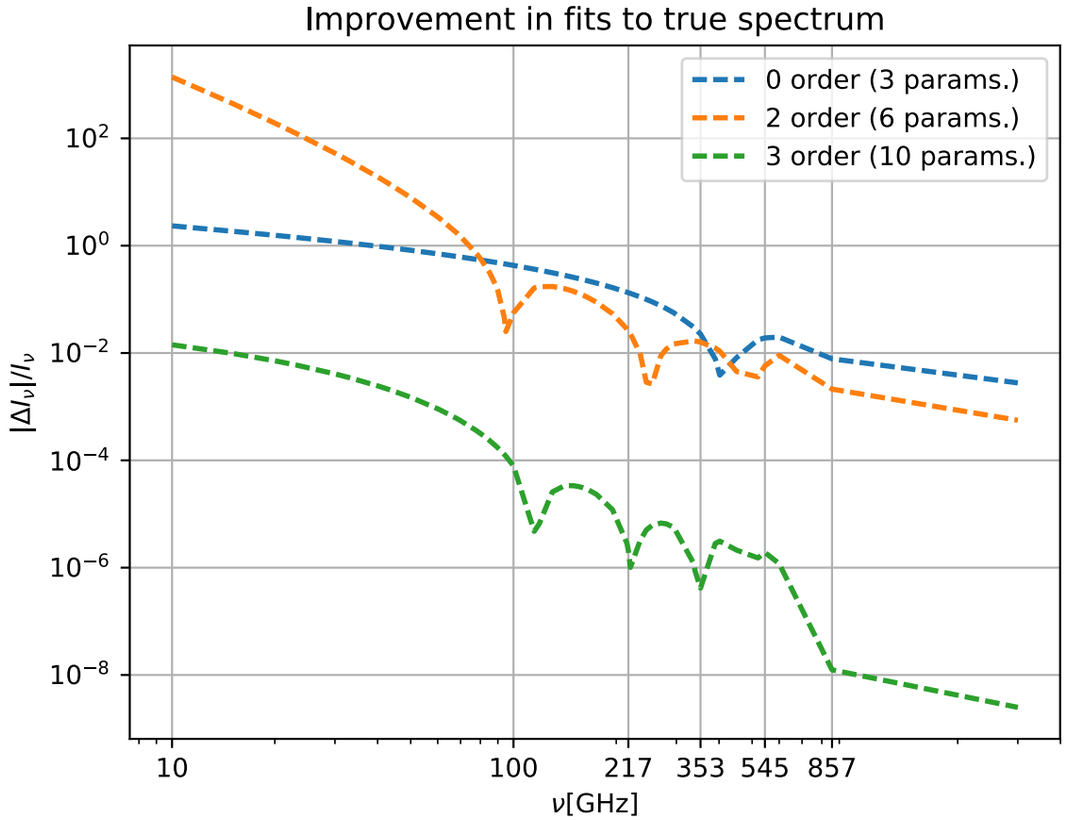




- We do a 10 parameter fit (3 base parameters and 7 Taylor moment parameters)
- Since we have to fit so many parameters, we Interpolate on the data to generate observations at 50 frequencies.
- We achieve about 4% accuracy at lower frequencies (100 GHz) and accuracy only becomes progressively better at higher frequencies.

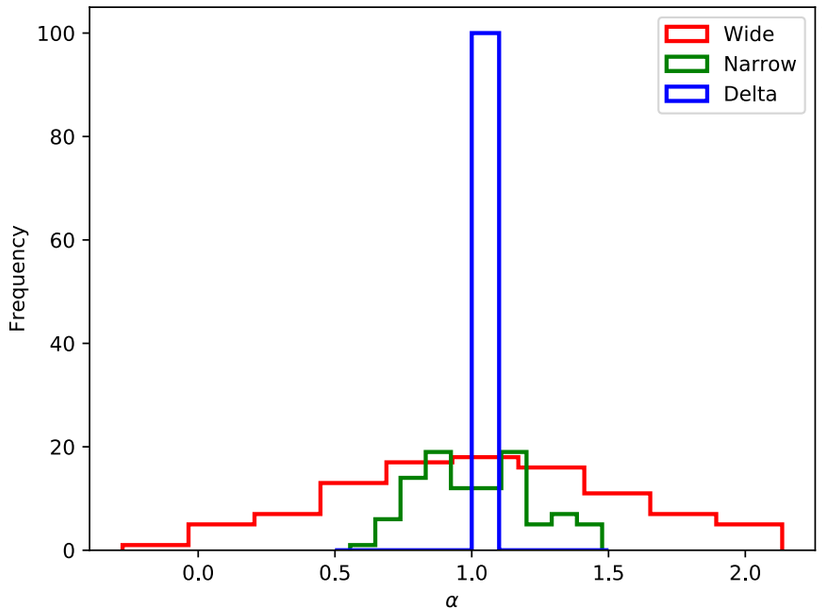
Fitting Intensity spectrum with Taylor moments
Marcelo's SED

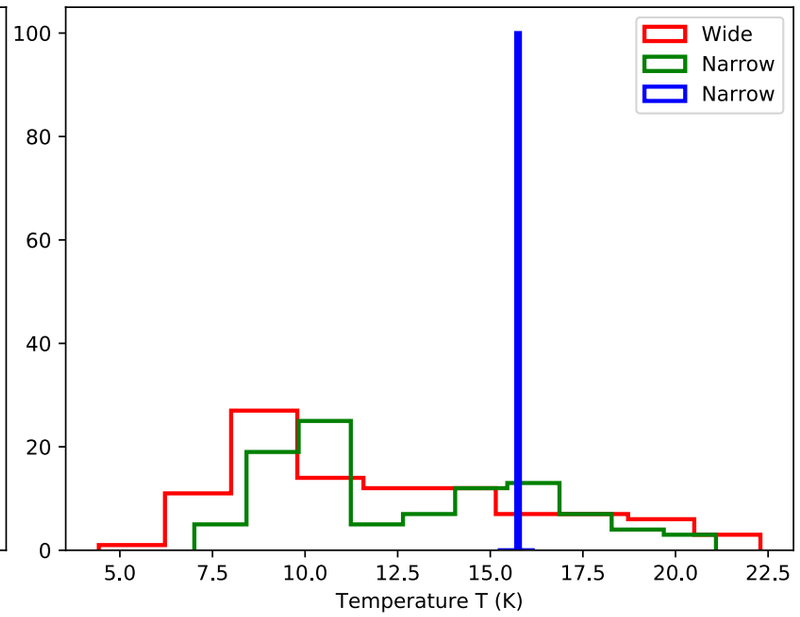


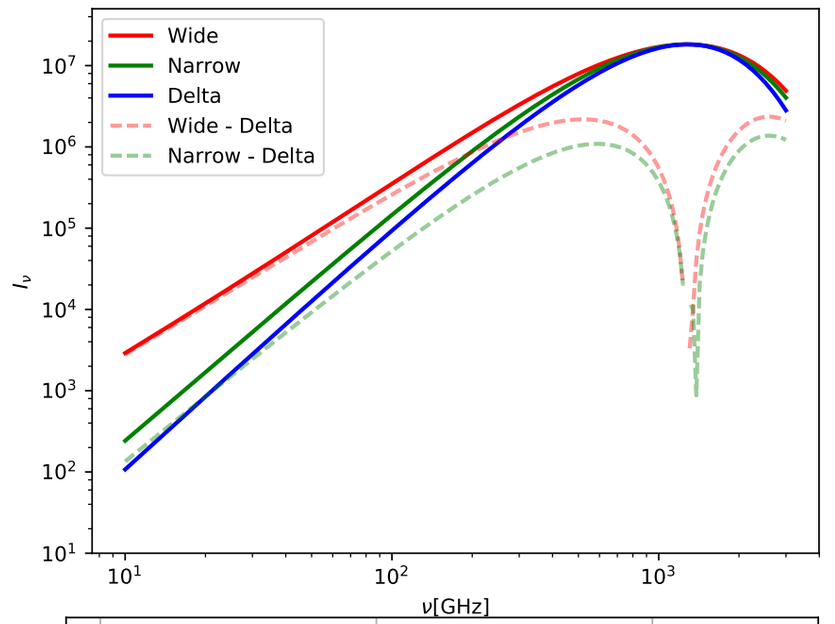


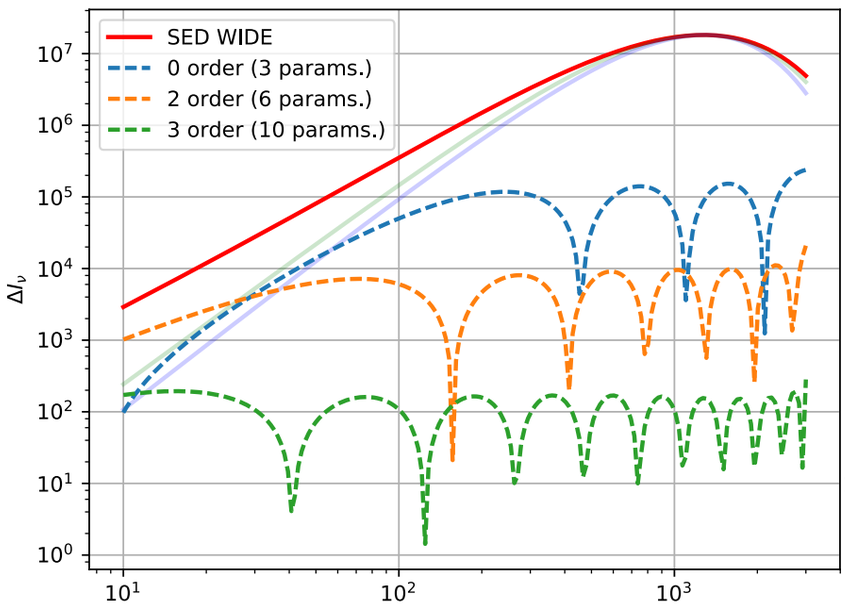
- We do a 10 parameter fit (3 base parameters and 7 Taylor moment parameters)
- Since the data provided has many frequency channels, we do not perform any interpolation and work with raw data.
- We don't ignore the data point at 3000 GHz.
- For the 3 order (10 parameter fit) we achieve ~1% accuracy at 10 GHz which only becomes progressively better for higher frequencies.

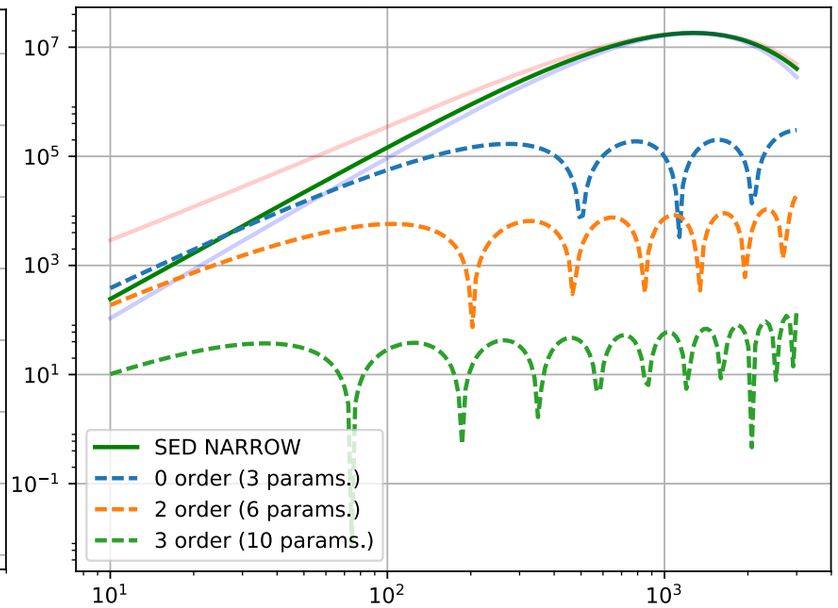
Toy model SED's

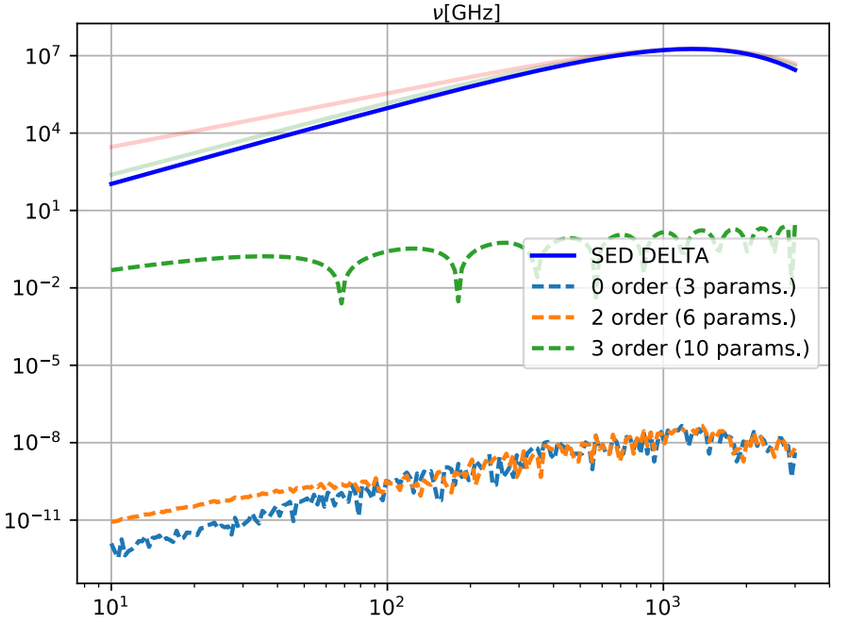


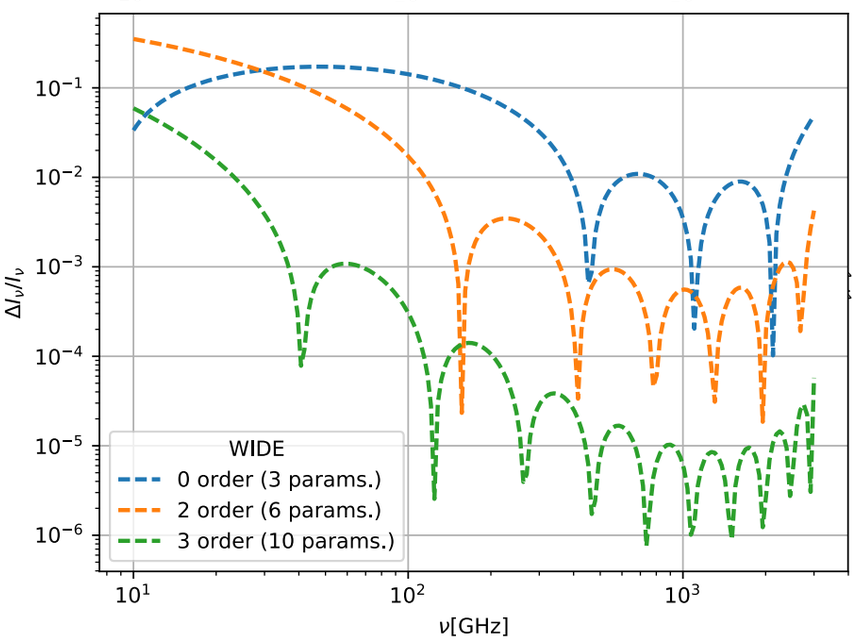


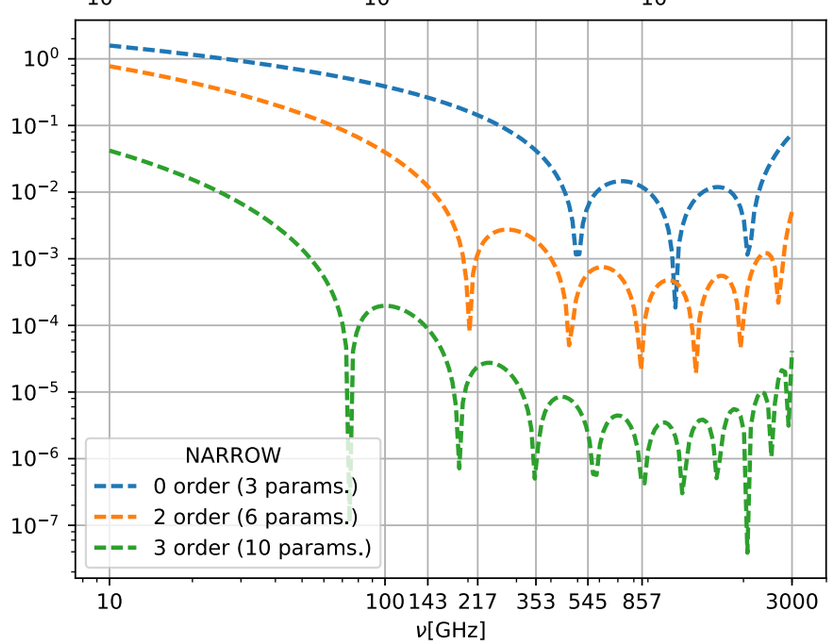


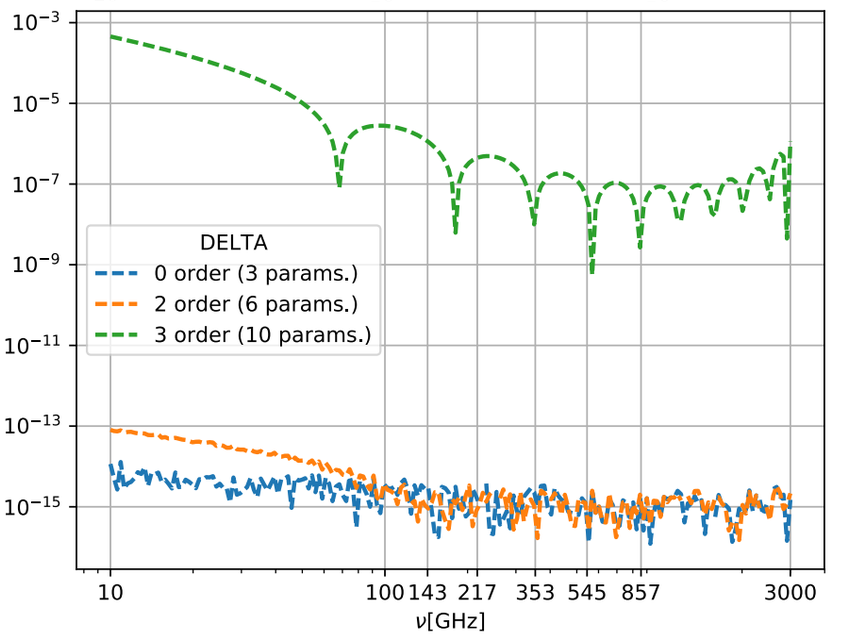






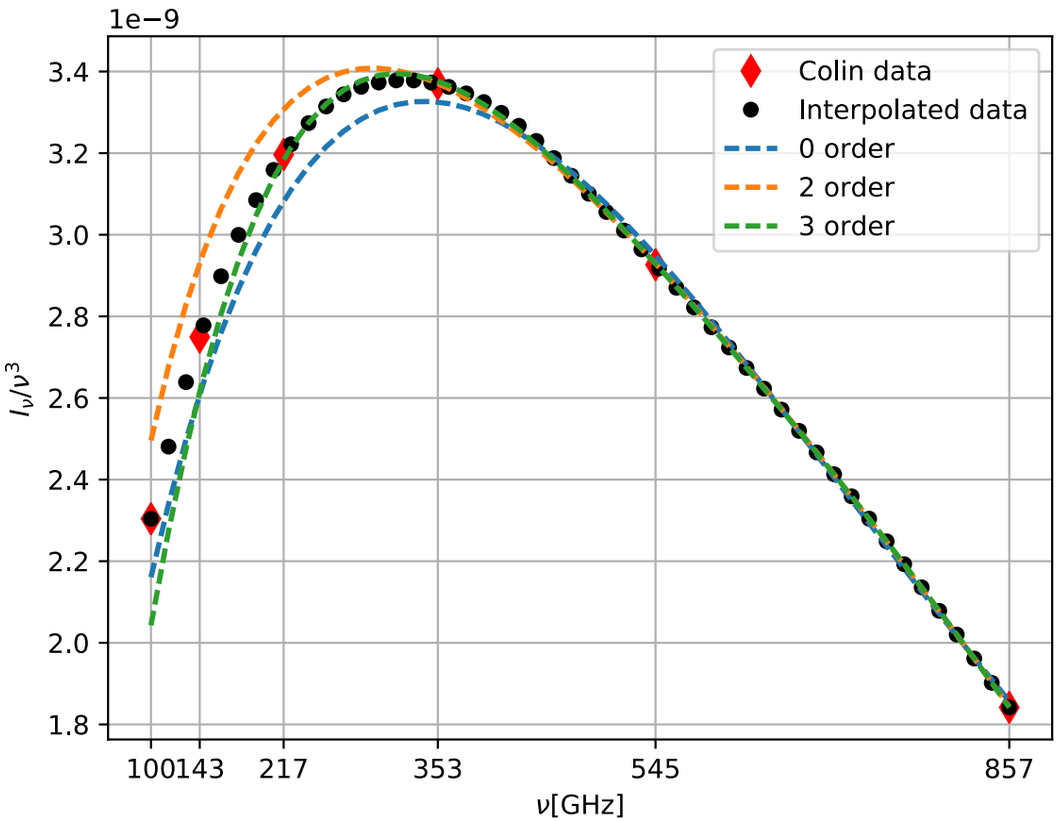


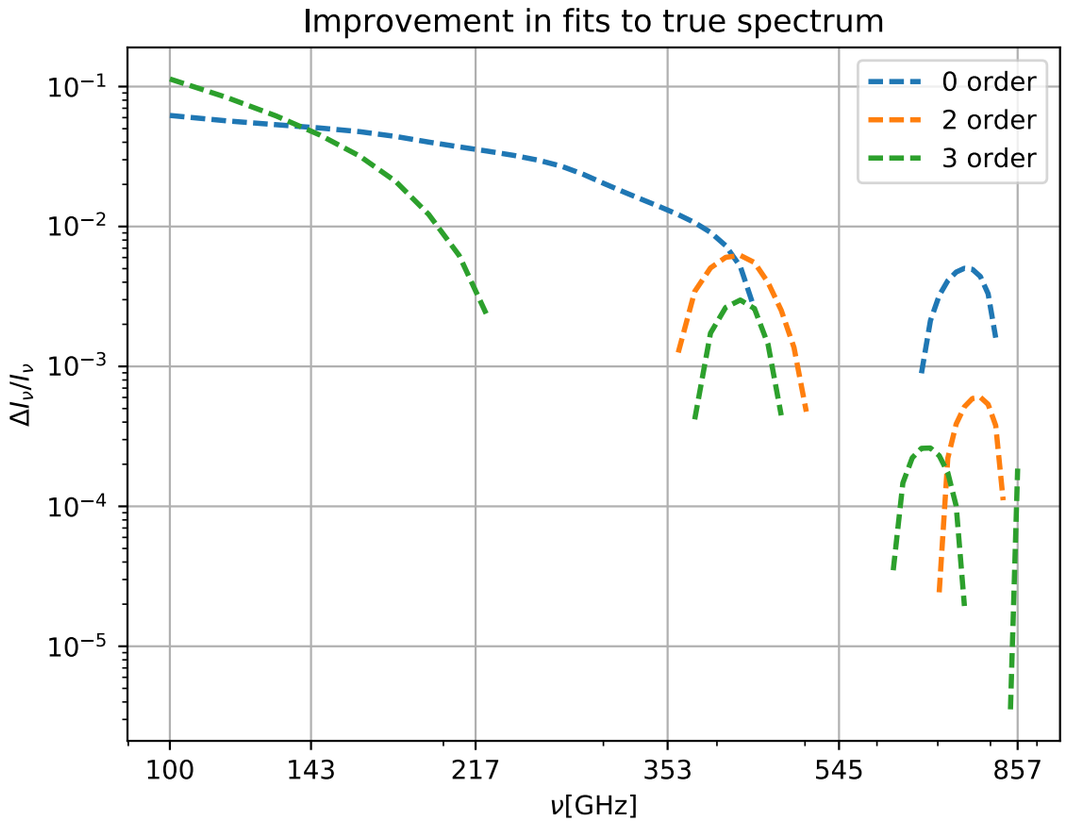




Old results

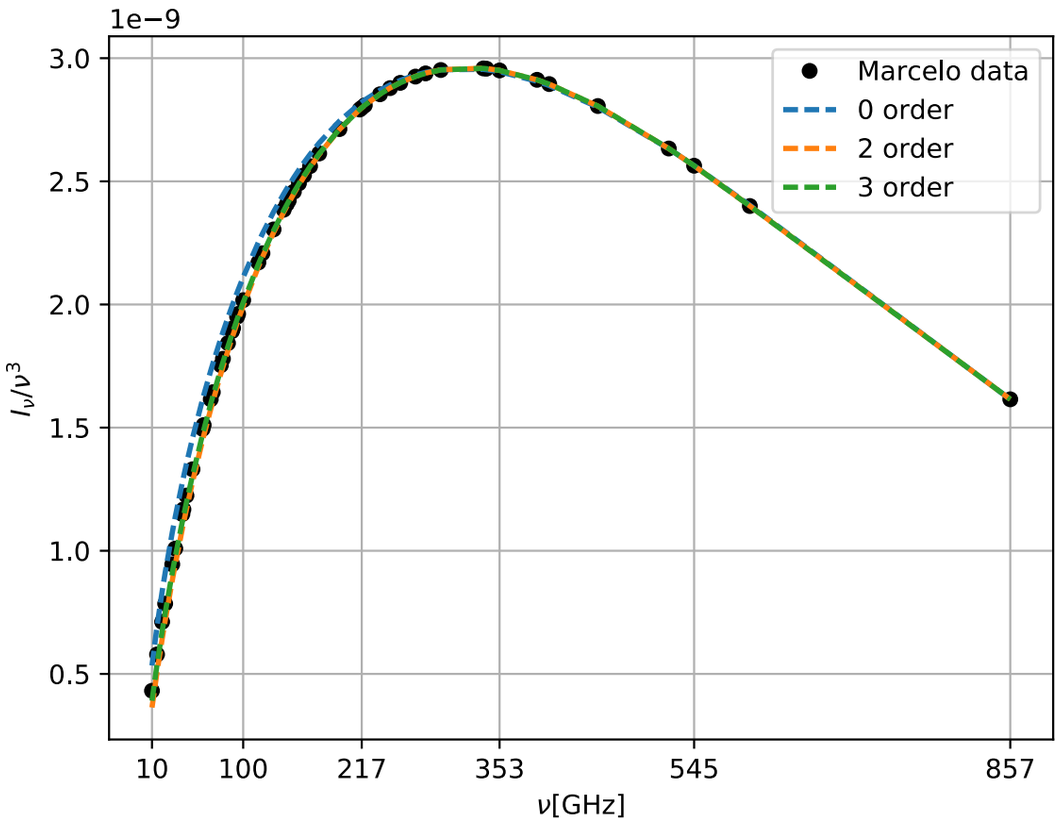
Fitting Intensity spectrum with Taylor moments
Colin's CIB monopole data

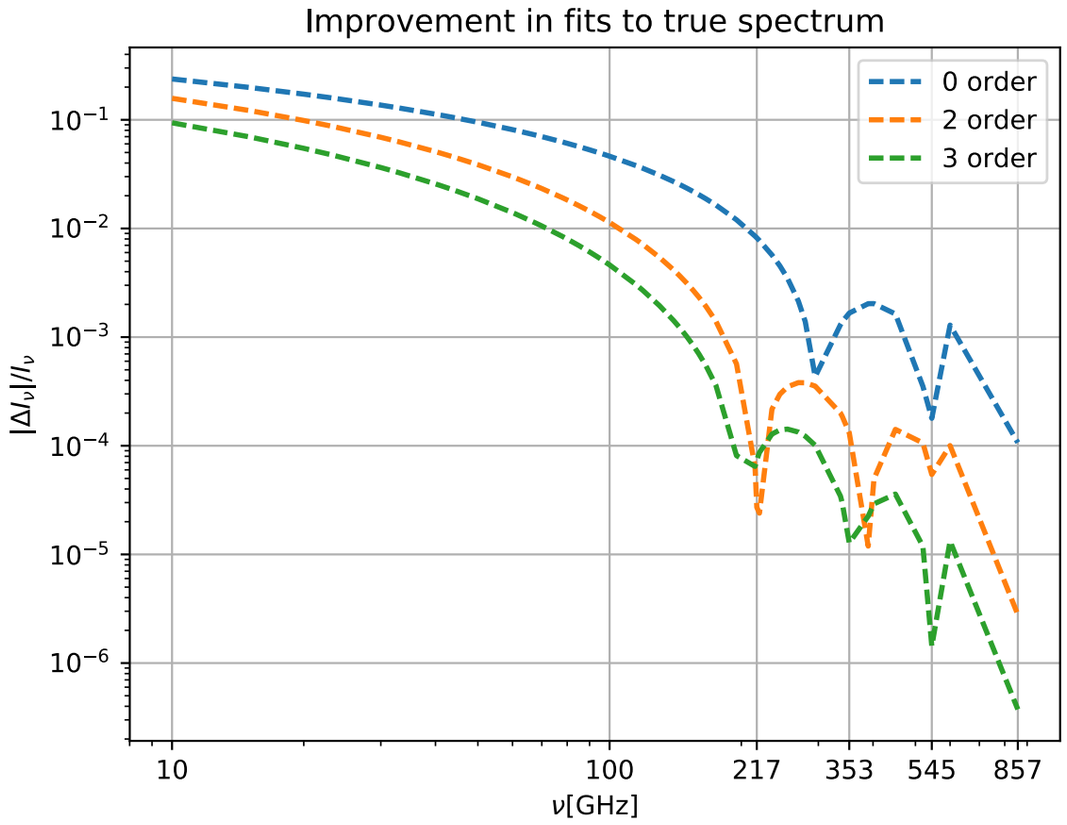




- We do a 10 parameter fit (3 base parameters and 7 Taylor moment parameters)
- Since we have to fit so many parameters, we Interpolate on the data to generate observations at 50 frequencies.
- 10% error on lower frequencies (100 GHz) but we are able to achieve sub-percent accuracy at frequencies above 217

Fitting Intensity spectrum with Taylor moments
Marcelo's data





- We do a 10 parameter fit (3 base parameters and 7 Taylor moment parameters)
- Since the data provided has many frequency channels, we do not perform any interpolation and work with raw data.
- We ignore the data point at 3000 GHz.
- While we have higher error (10%) on lower frequencies, above 100 GHz we are able to achieve sub-percent accuracy.