

# OPERA vs DRAGraces: Who would win?

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## Conclusion First:

- The performance (wavelength solution, flux calibration) of the two data reduction pipelines is very comparable
- However, each has some problems to follow up.

## Background

- GRACES--Gemini Remote Access to CFHT ESPaDOnS Spectrograph**
- 1-fiber mode and 2-fiber mode
- Two data reduction pipelines: **DRAGRACES** (supported at Gemini) and **OPERA** (developed by CFHT, hard to maintain at Gemini site)

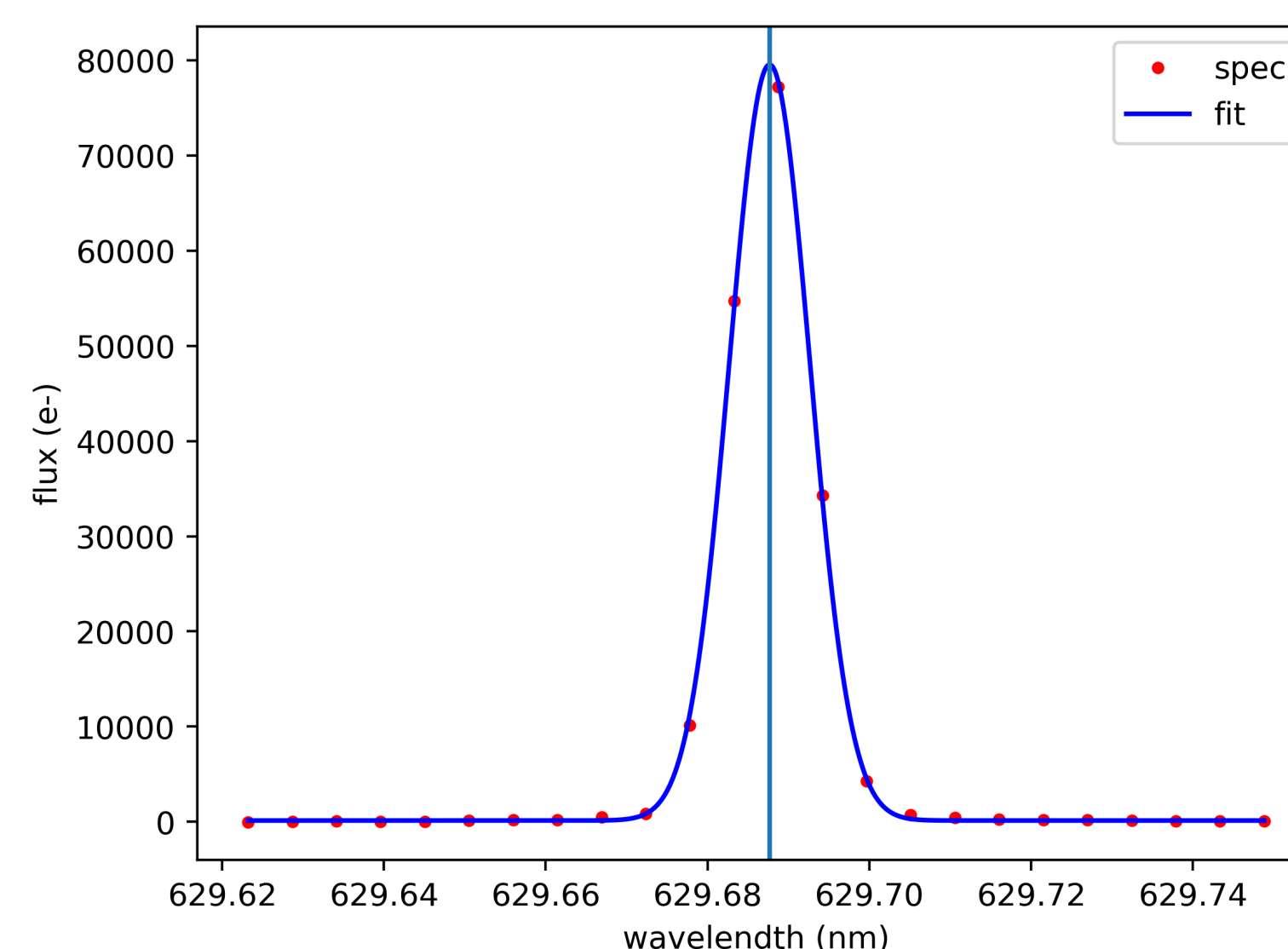
## What are we looking for...

- Compare the performance of these two pipelines and see whether or not we can replace OPERA with DRAGRACES.
- How can we improve DRAGRACES?

## Project Overview

- 1f mode**
  - standard star objects
  - arc lines
- 2f mode**
  - emission-line galaxy spectrum
  - arc lines
- wavelength solution
- flux calibration
- spectrum resolution
- wavelength solution
- flux calibration
- spectrum resolution

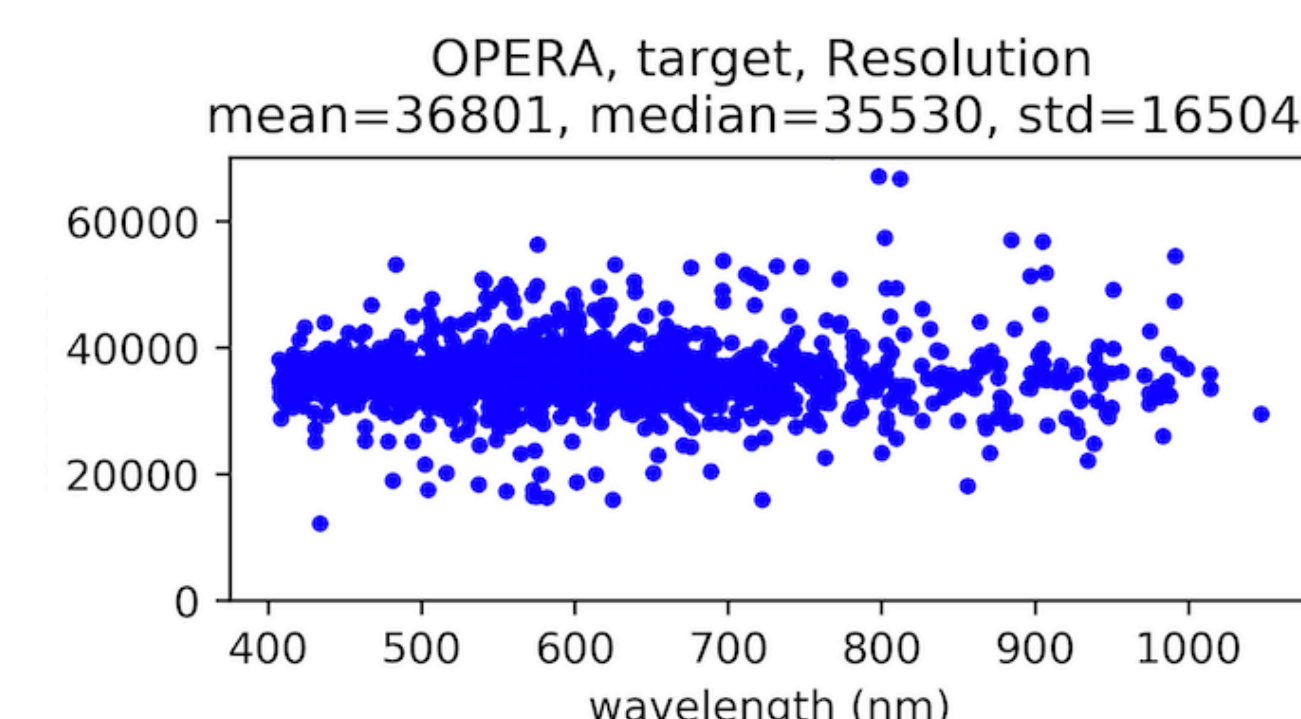
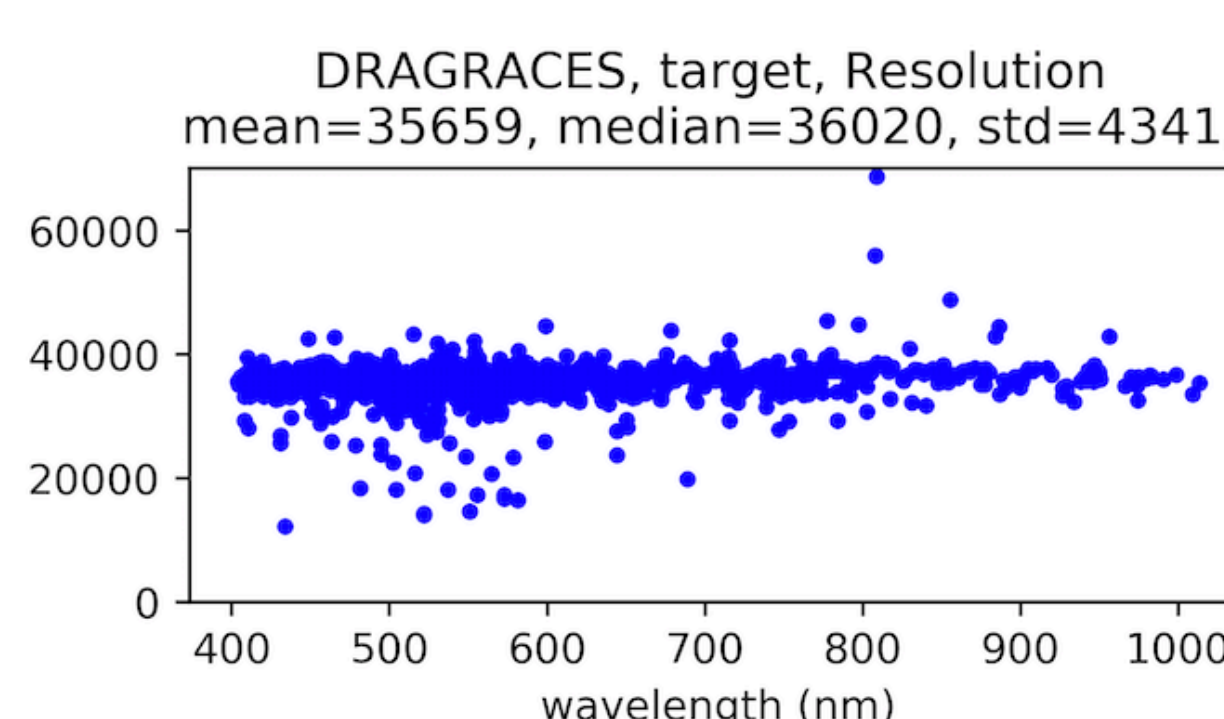
## The fitting program



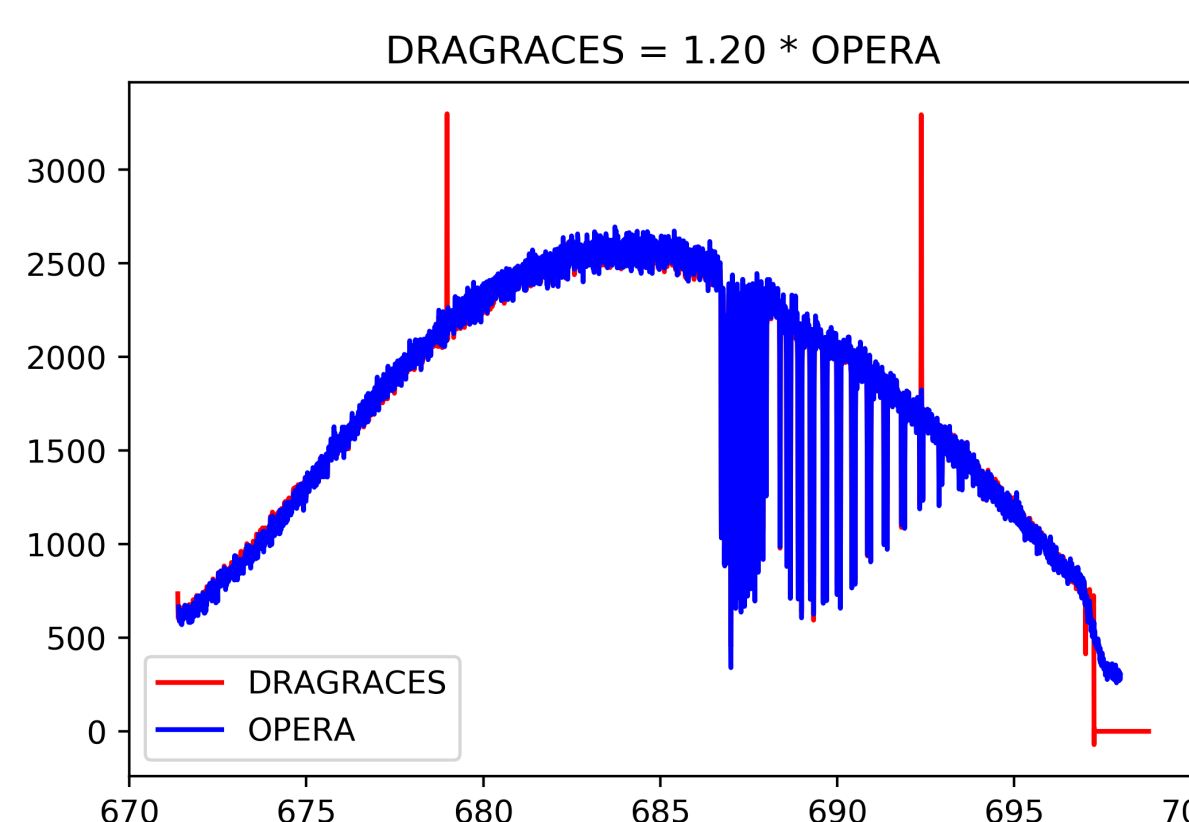
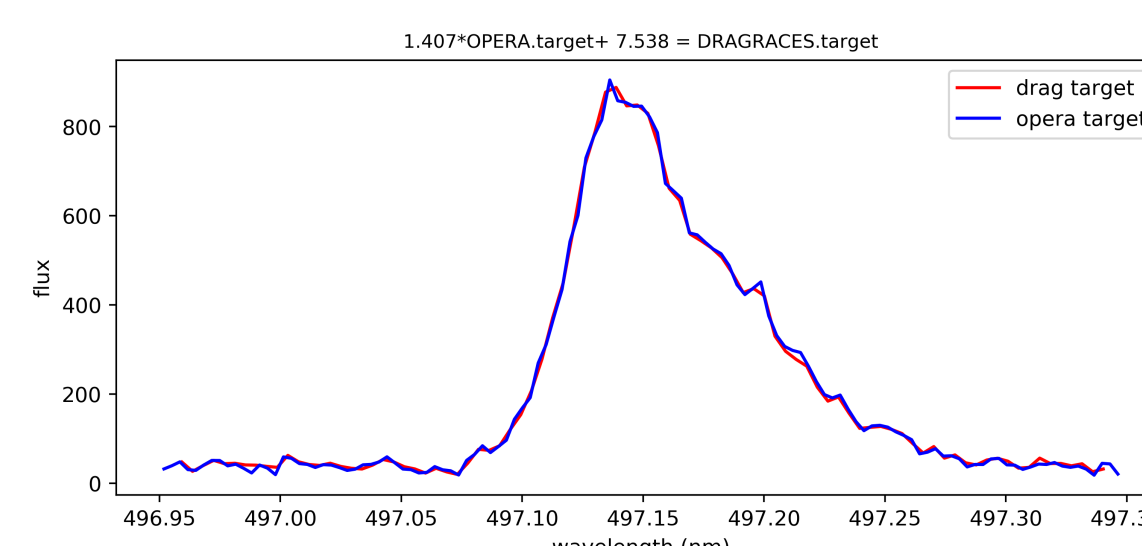
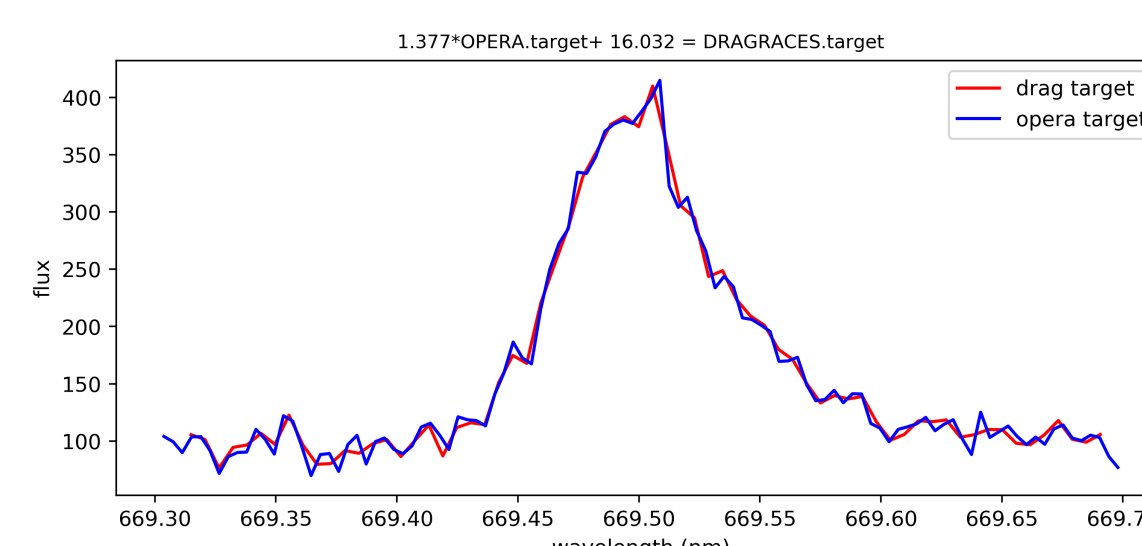
- auto-match the catalog
- Monte-Carlo optimiser
- auto-adjust the wavelength range

## Result: Resolution

	DRAGRACES	OPERA
1f	$(528 \pm 1) \times 10^2$	$(567 \pm 7) \times 10^2$
2f-target	$(361 \pm 1) \times 10^2$	$(357 \pm 3) \times 10^2$
2f-sky	$(366 \pm 3) \times 10^2$	$(349 \pm 9) \times 10^2$

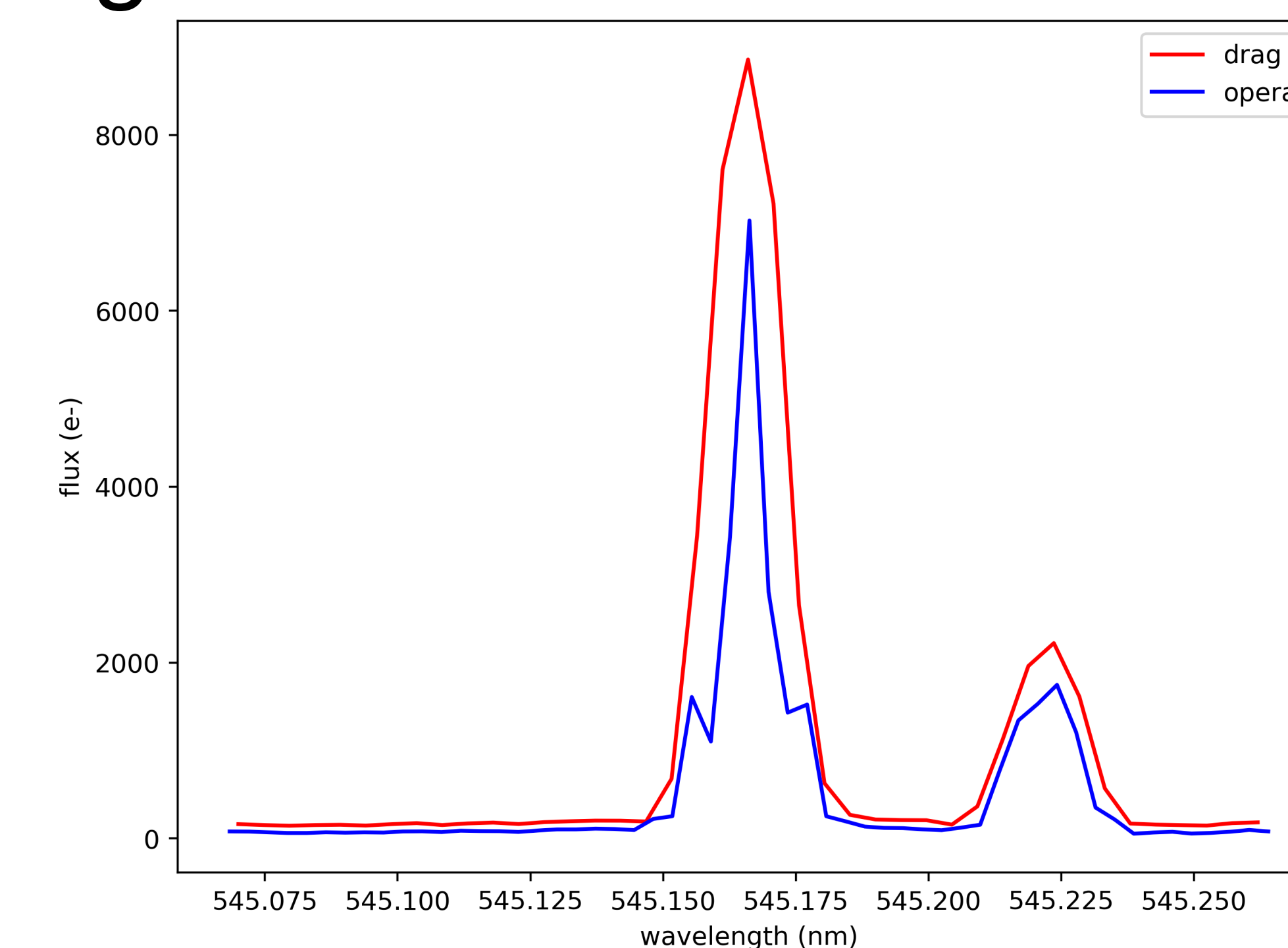


## Result: Flux calibration

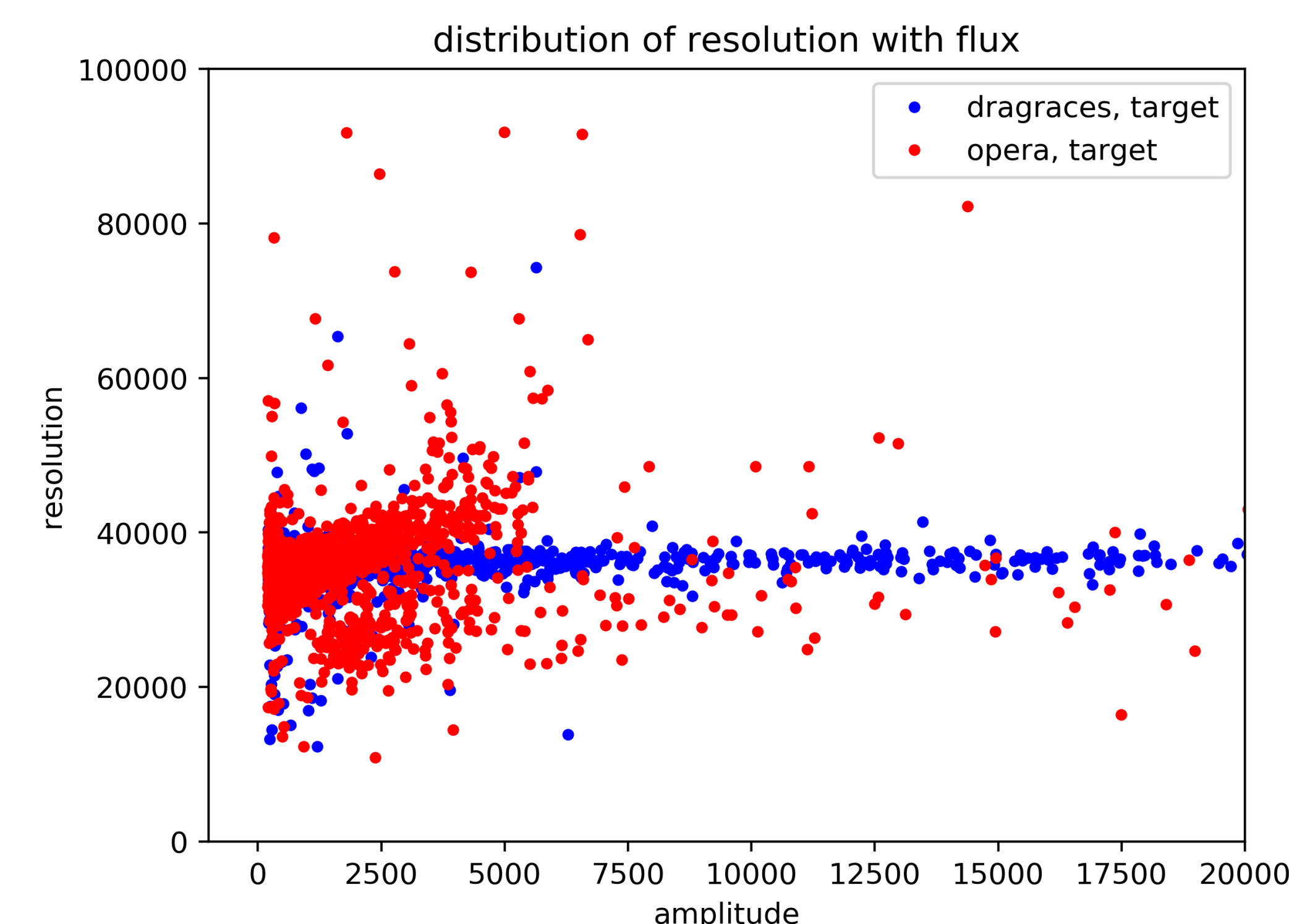


## What's up: narrow line performance

### OPERA's weird behaviour on narrow strong lines



### OPERA's resolution obtained using the fitting program



## Acknowledgement

- Thanks a lot to André-Nicolas Chené for the suggestions and technical help about DRAGRACES



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