Astronomical Fourier Transform Spectroscopy at the Hamburg Observatory

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18.9.12

Structure

1. Fourier Transform Spectroscopy

2. post-dispersed FTS
   - Concept
   - Performance
   - Outlook

Introduction

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- in combination with absorption cells accuracies of $1ms^{-1}$ can be achieved
- however, echelle gratings are not the only option for high-resolution spectroscopy
- we are working on a high resolution FTS with good signal-to-noise ratio for use with the 1.2m Oskar-Lühning-Telescope

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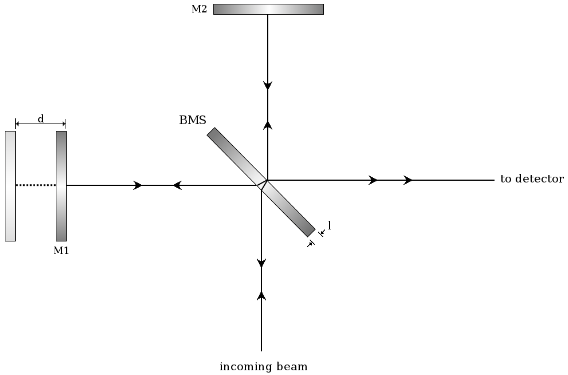
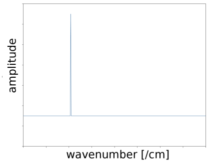


Principle



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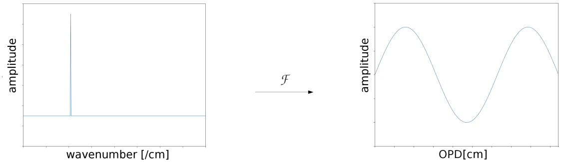

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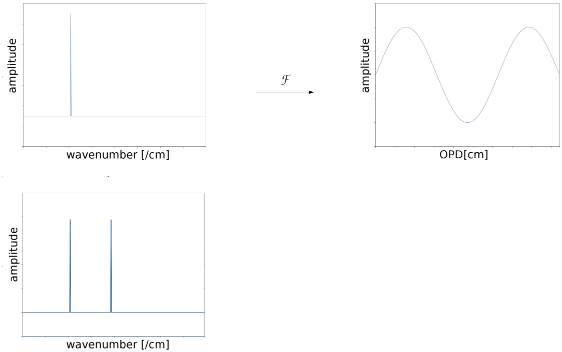
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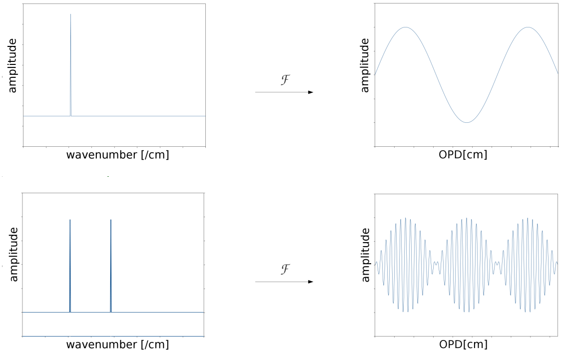
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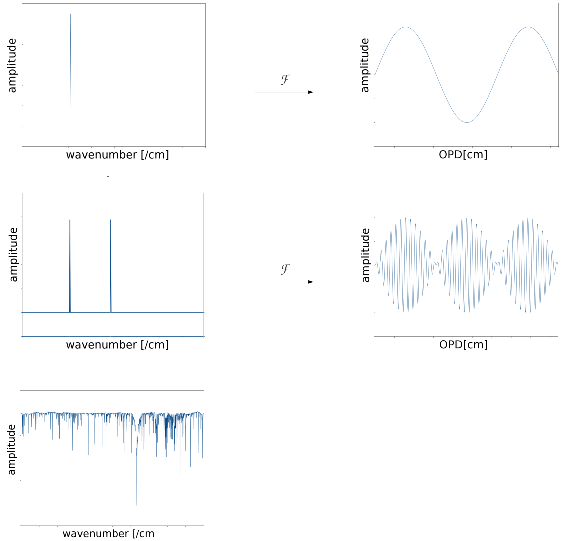
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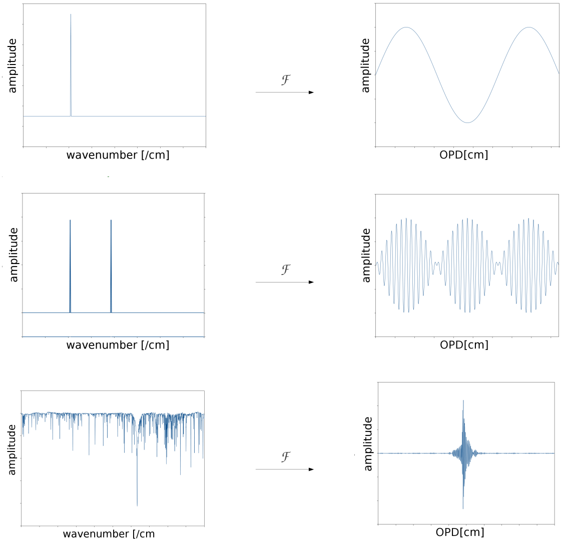
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- good wavelength calibration allows operations in wavelength regions not accessible with iodine cell calibration

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- ⇒post-dispersed FTS

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- equivalent to N narrow-band spectrometers running simultaneously

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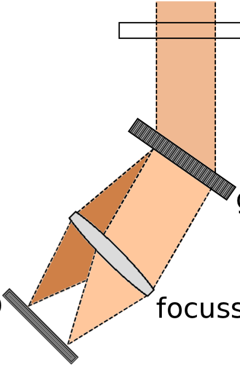

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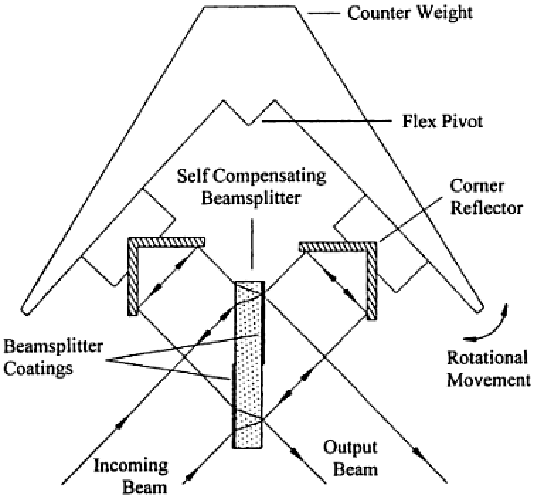
- Zemax simulations are currently being performed
- target is $R = 50000$
- Behr et alii (2009) achieved a $\approx 20ms^{-1}$ accuracy with a dispersed FTS linked to a $0.6m$ telescope

Thank you for your attention!

Bomem


Counter Weight
Flex Pivot
Self Compensating Beamsplitter
Corner Reflector
Beamsplitter Coatings
Rotational Movement
Incoming Beam
Output Beam