



Stretched Wire Alignment System @ VUV FEL

Johannes J. Prenting,
Deutsches Elektronen-Synchrotron
DESY, MEA2

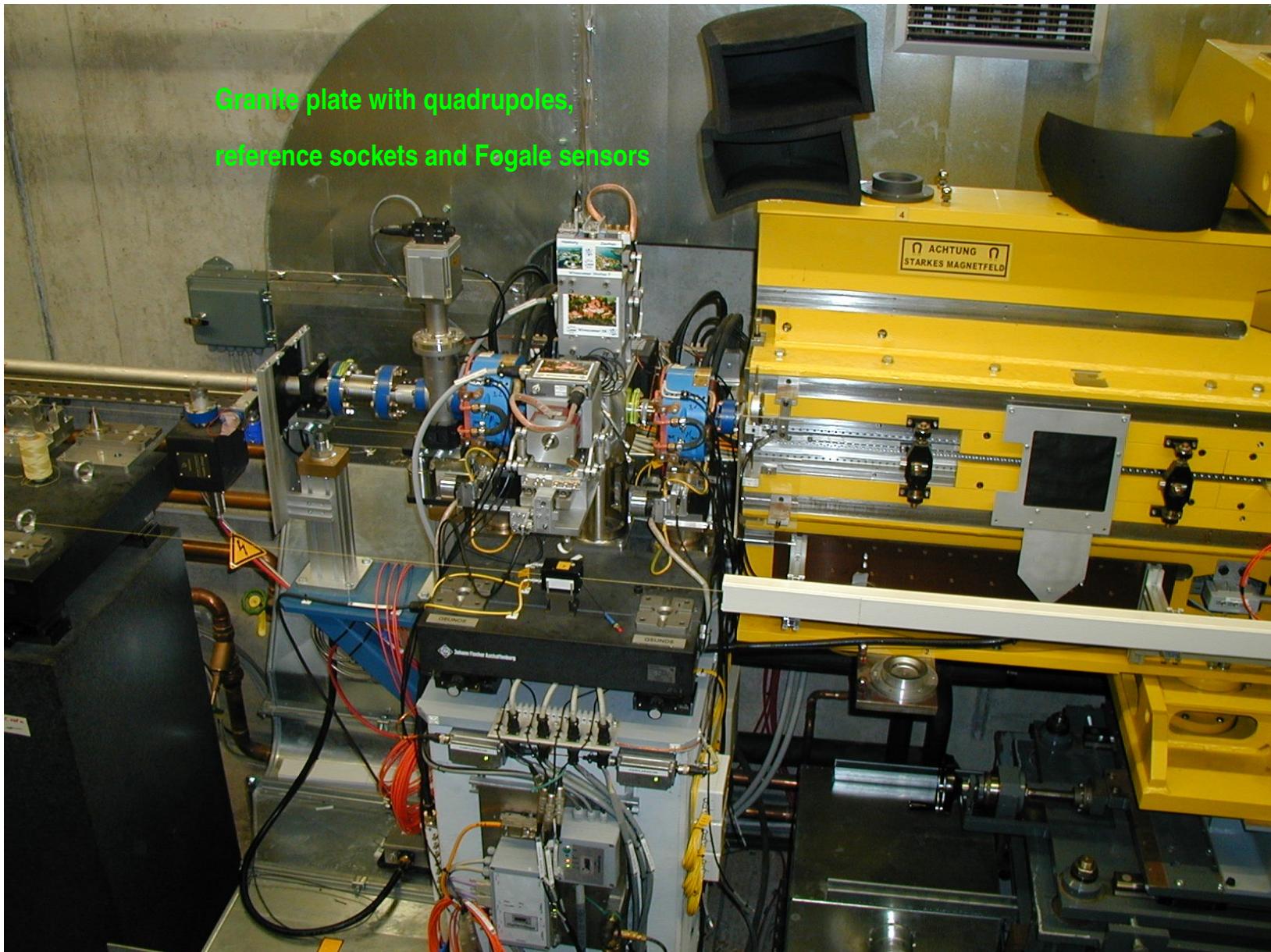
Installation

Alignment

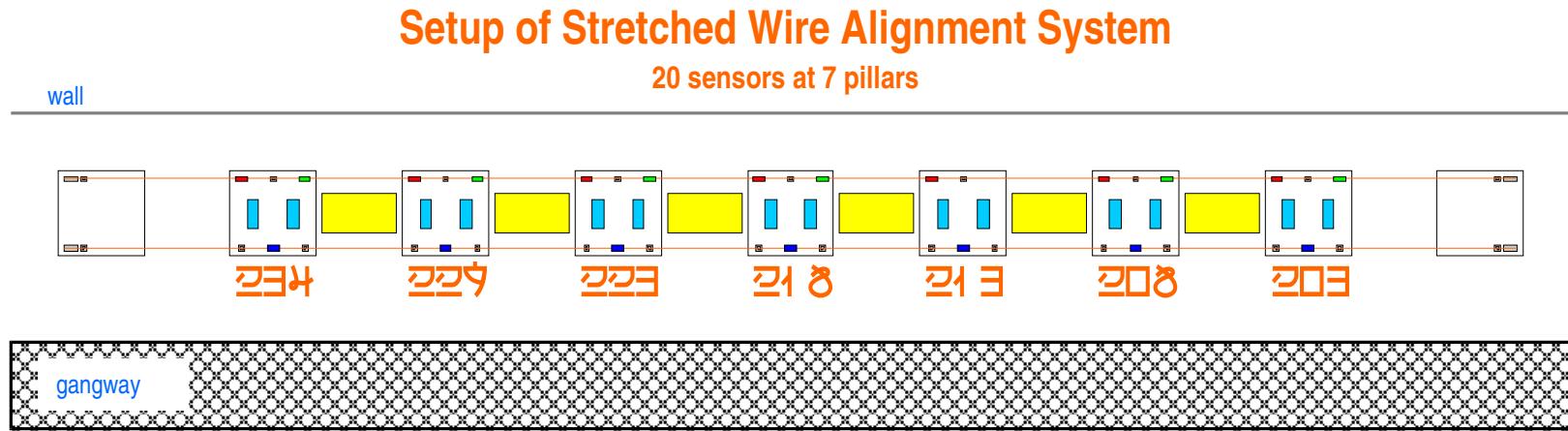
Results

Fourier Analysis

Correlation



Installation

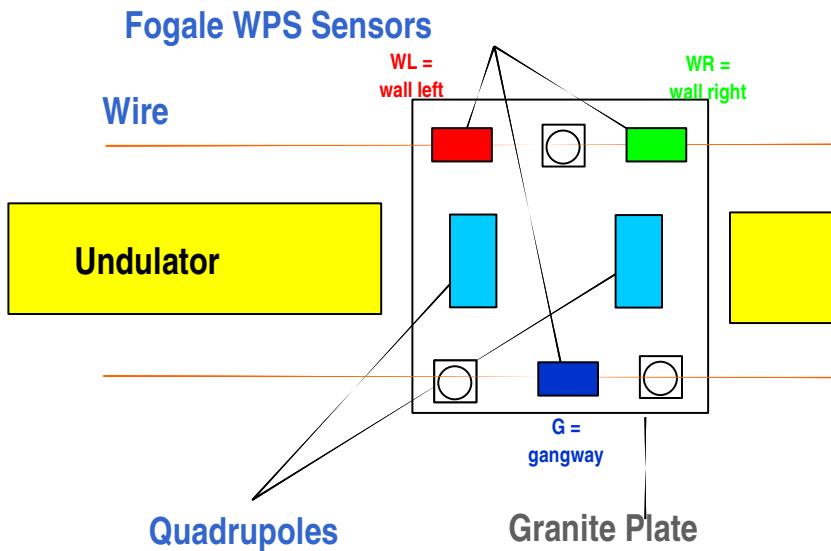


Alignment

Results

Fourier Analysis

Correlation



Installation

Initial Alignment

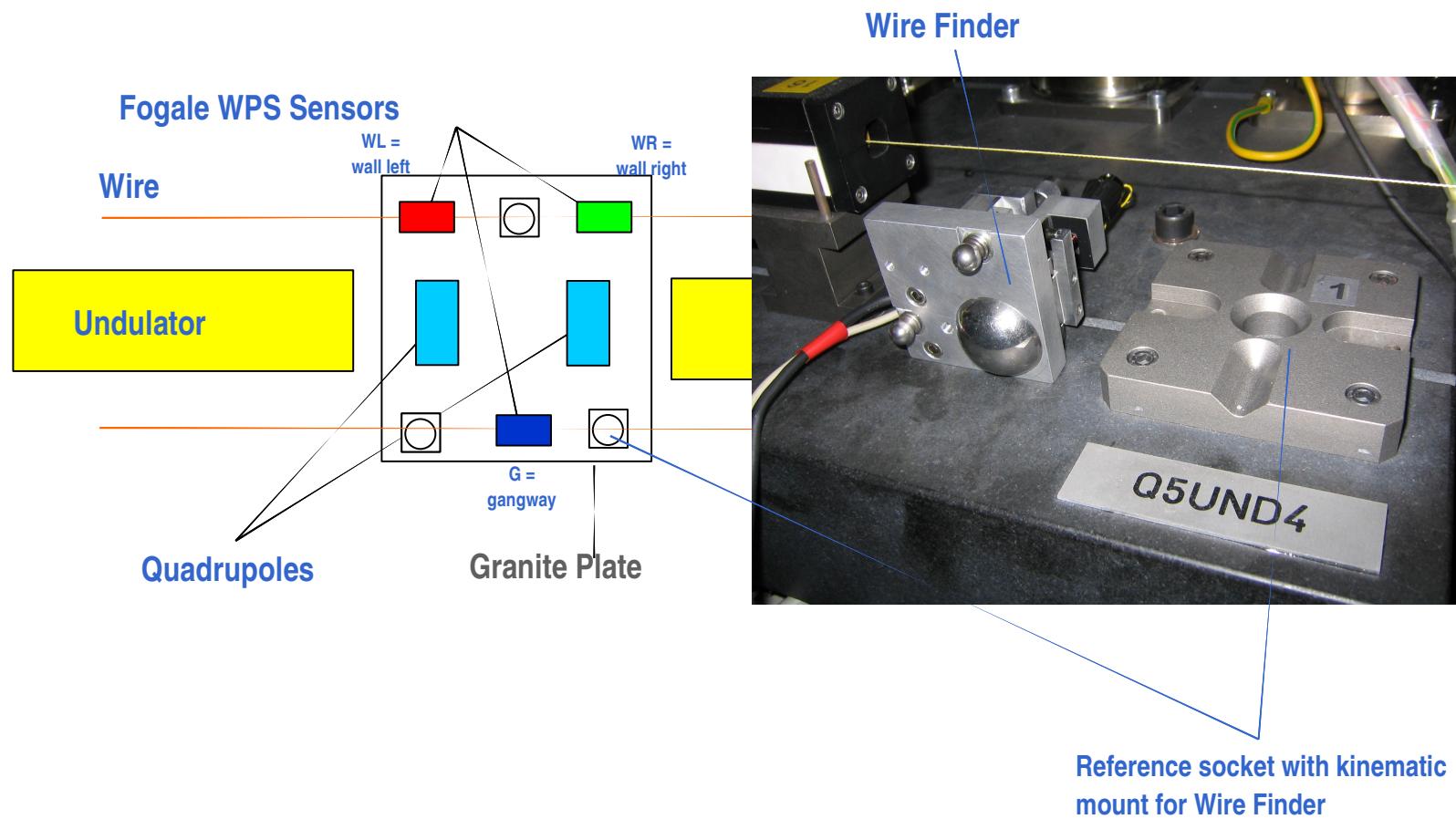
Results

Fourier Analysis

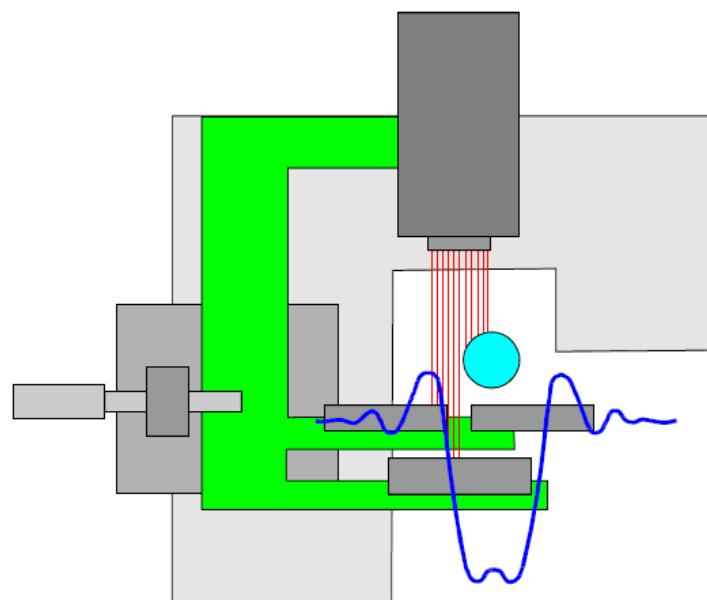
Correlation

Absolute alignment possible due to Wire Finder plus levelling instrument.

Permanent relative measurements with Fogale sensors.



Installation

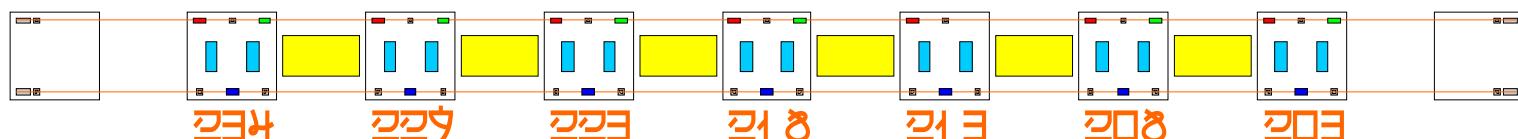


Initial Alignment

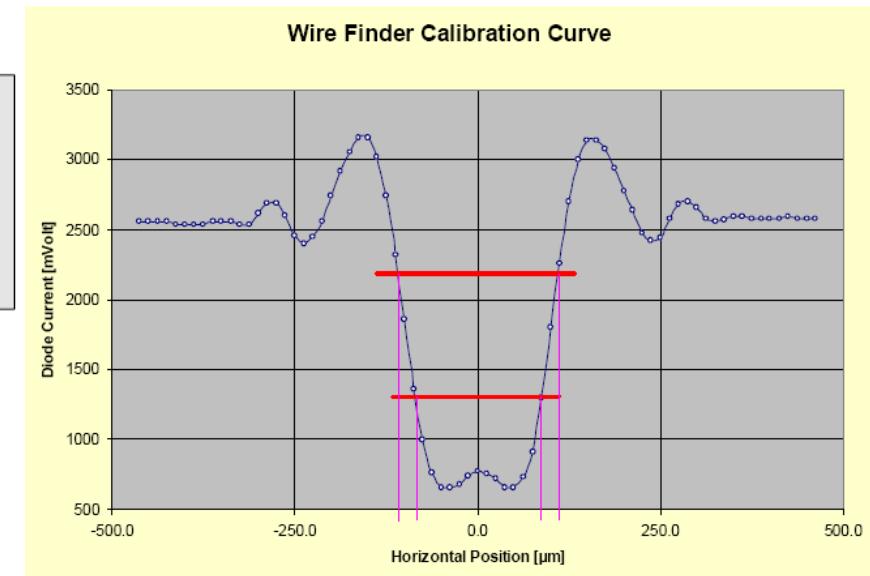
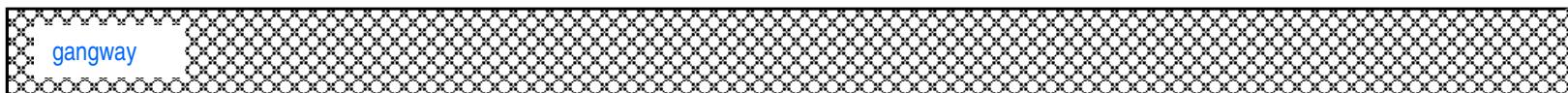
Results

Fourier Analysis

wall



Correlation



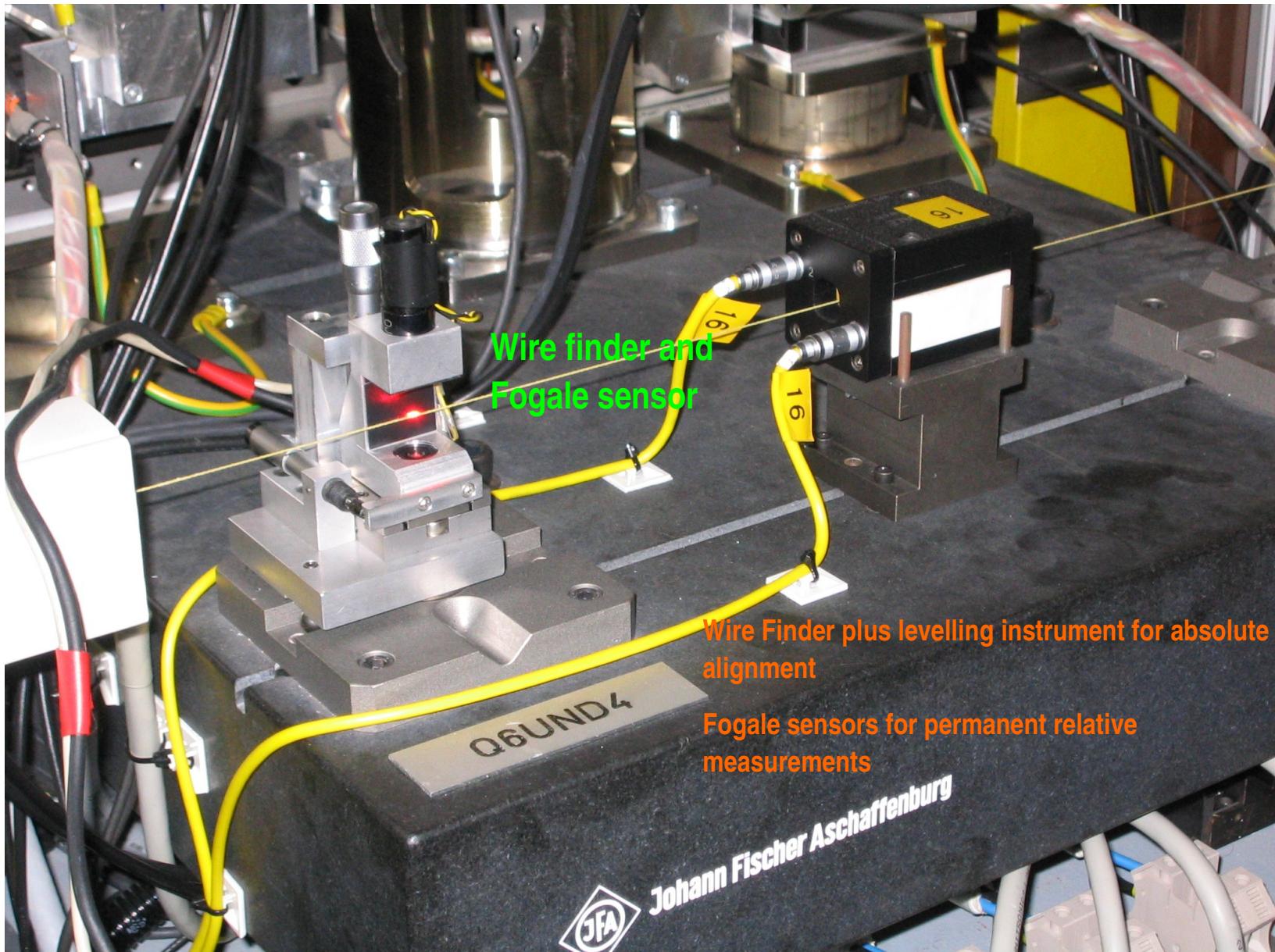
Installation

Initial Alignment

Results

Fourier Analysis

Correlation



Installation

Alignment

Results
whole period

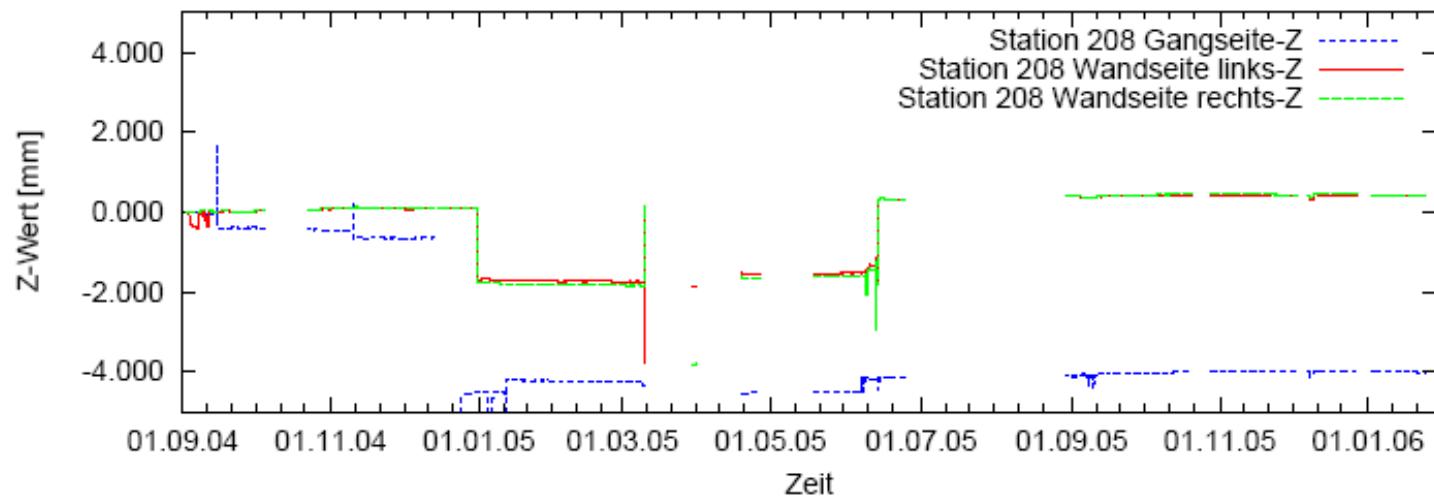
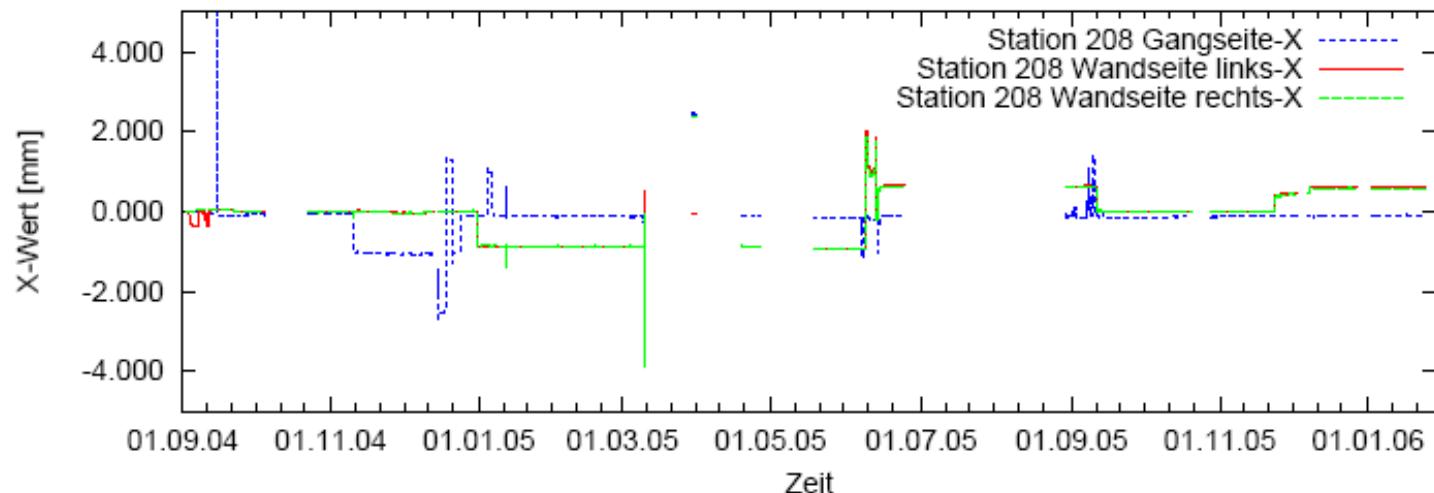
Fourier Analysis

Correlation

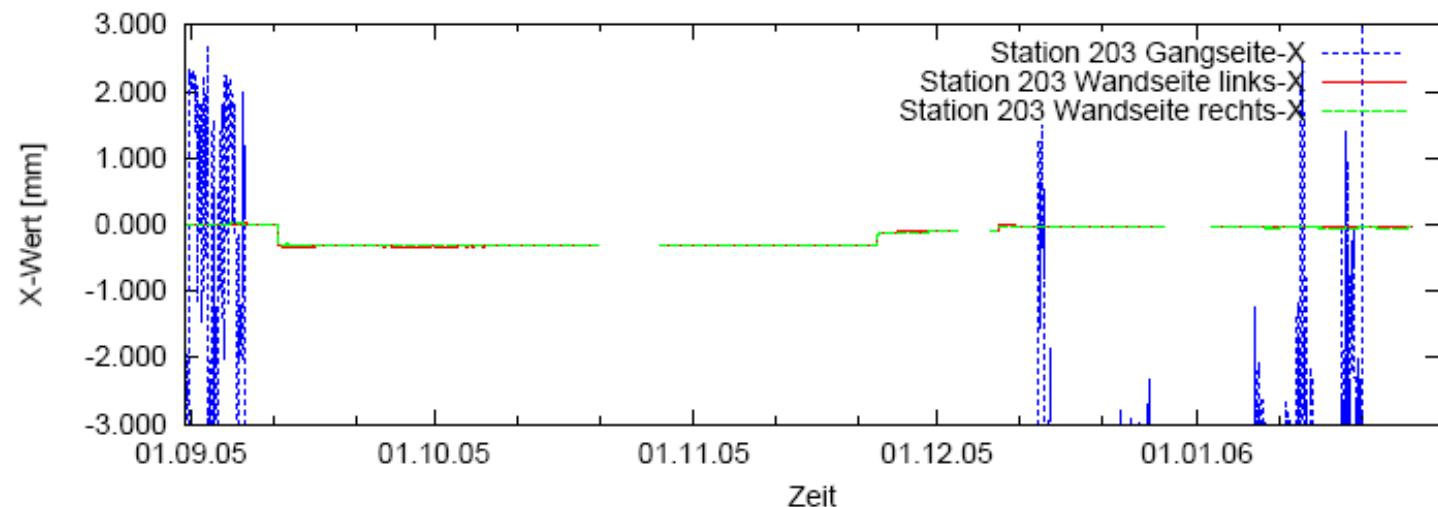
Several times: broken wires, breakdown of sensors & preamplifiers, network problems.

Modifications & reconstruction: idler pulley, wire tensioner.

-> Operation quite stable since July / Sept. 2005



Installation

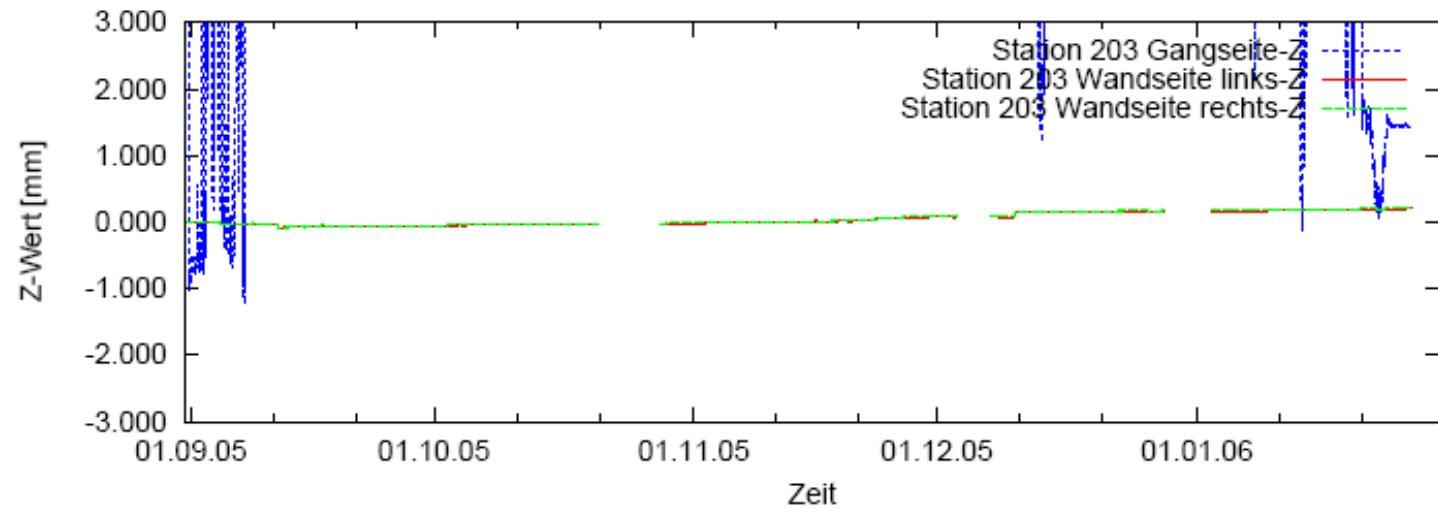


Alignment

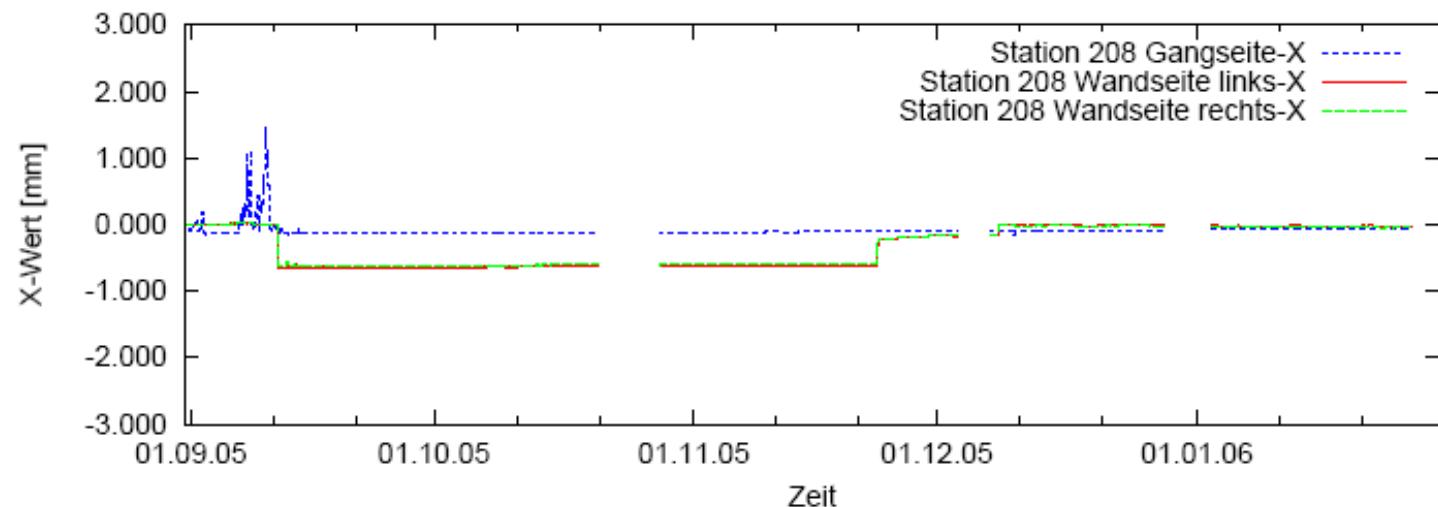
Results

Fourier Analysis

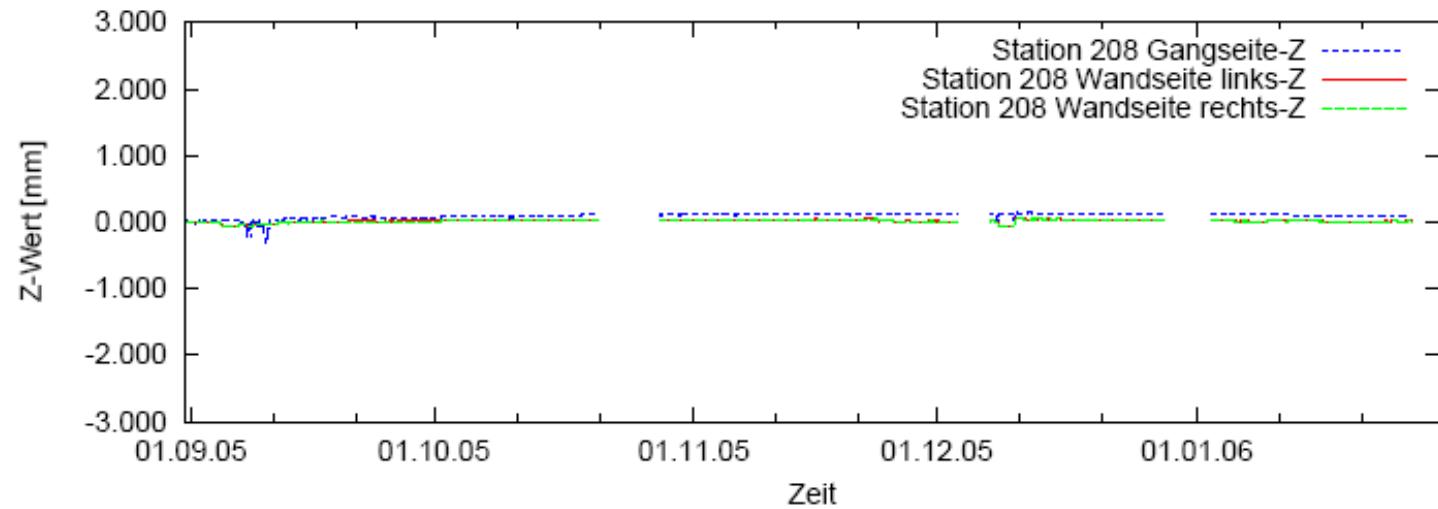
Correlation



Installation



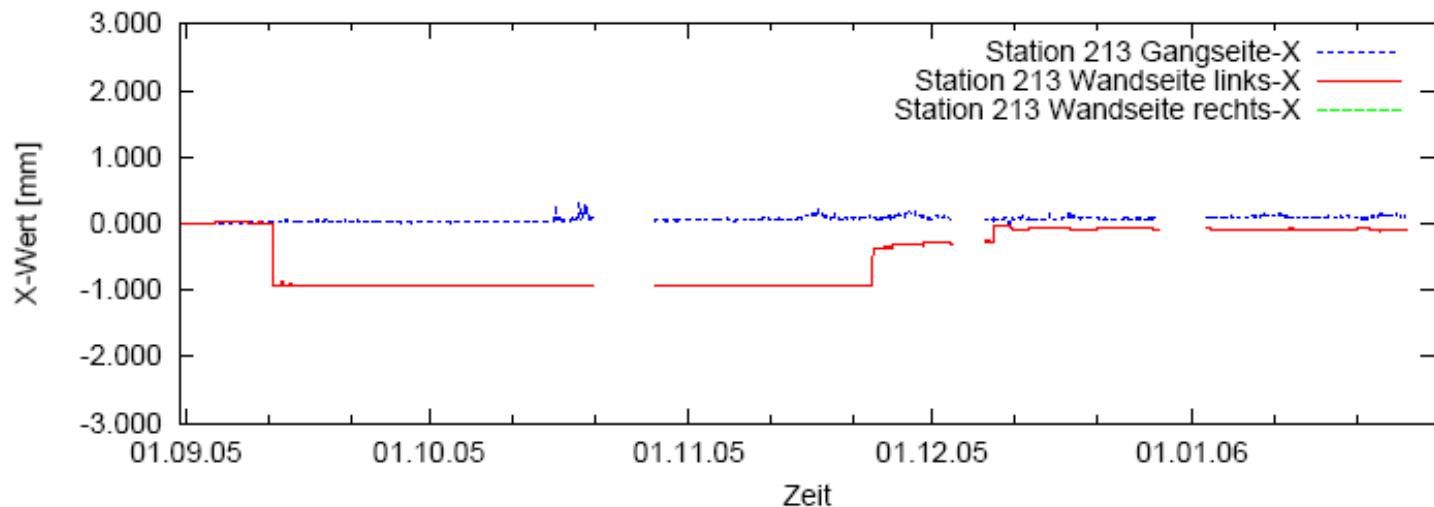
Results



Fourier Analysis

Correlation

Installation

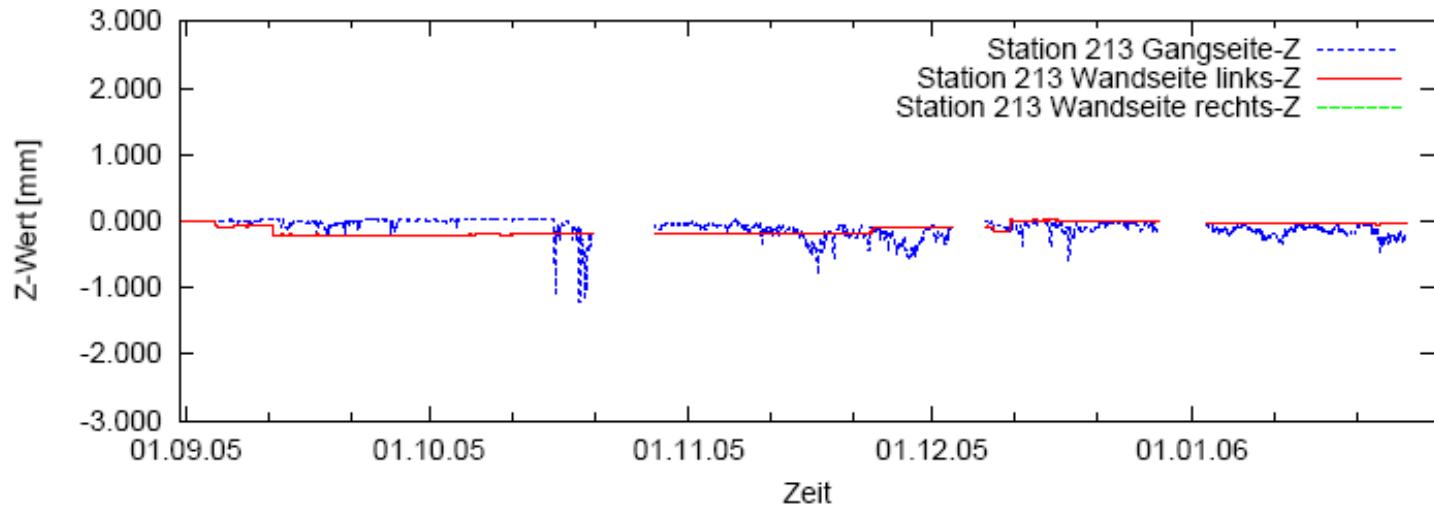


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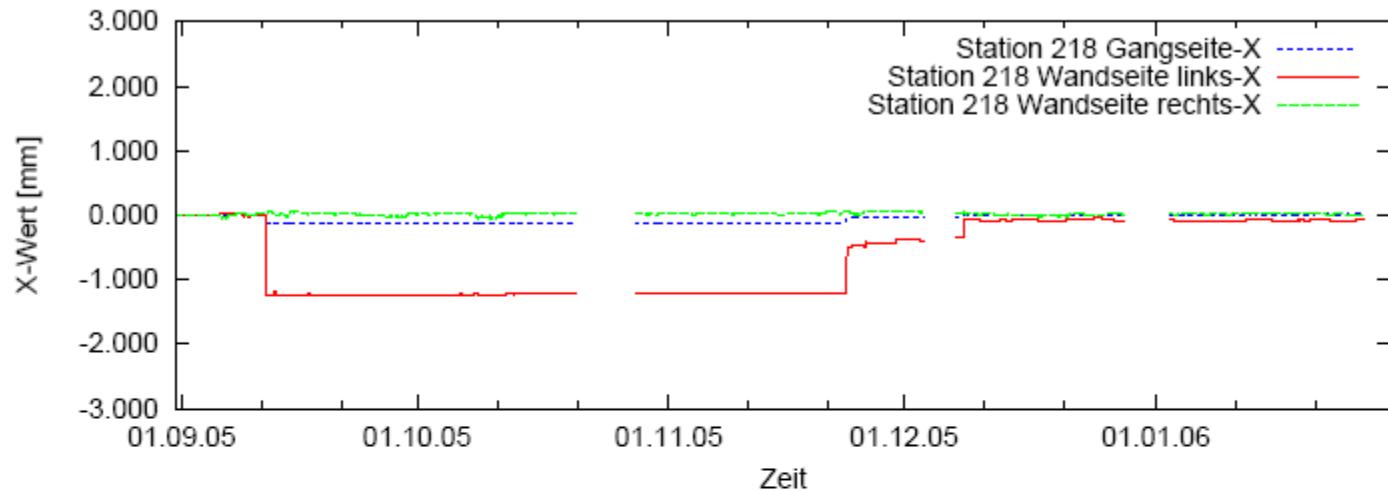
Results

Fourier Analysis

Correlation



Installation

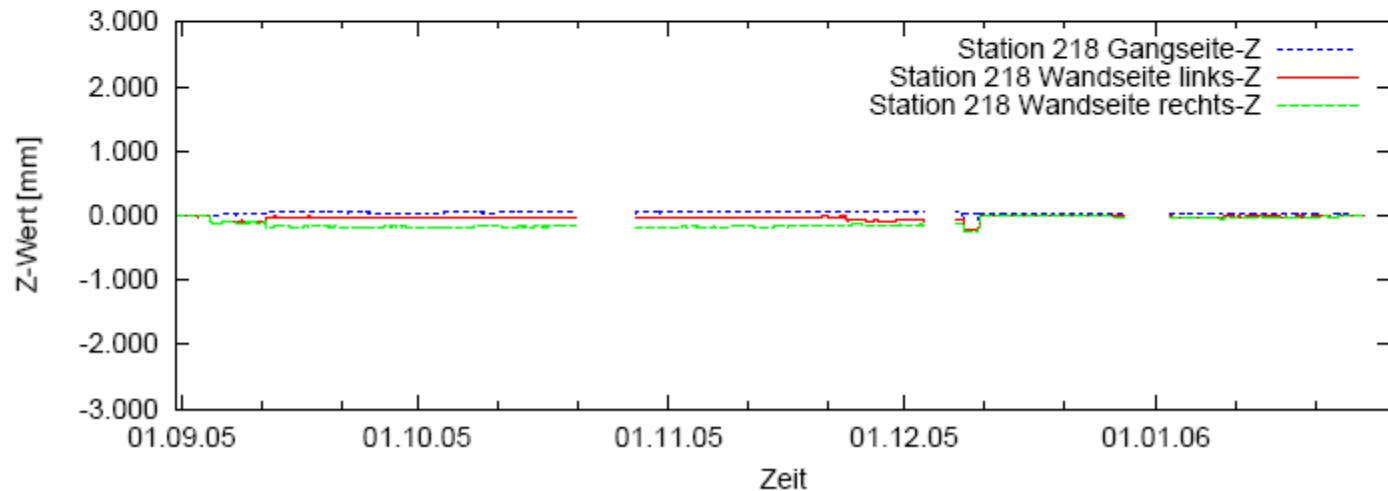


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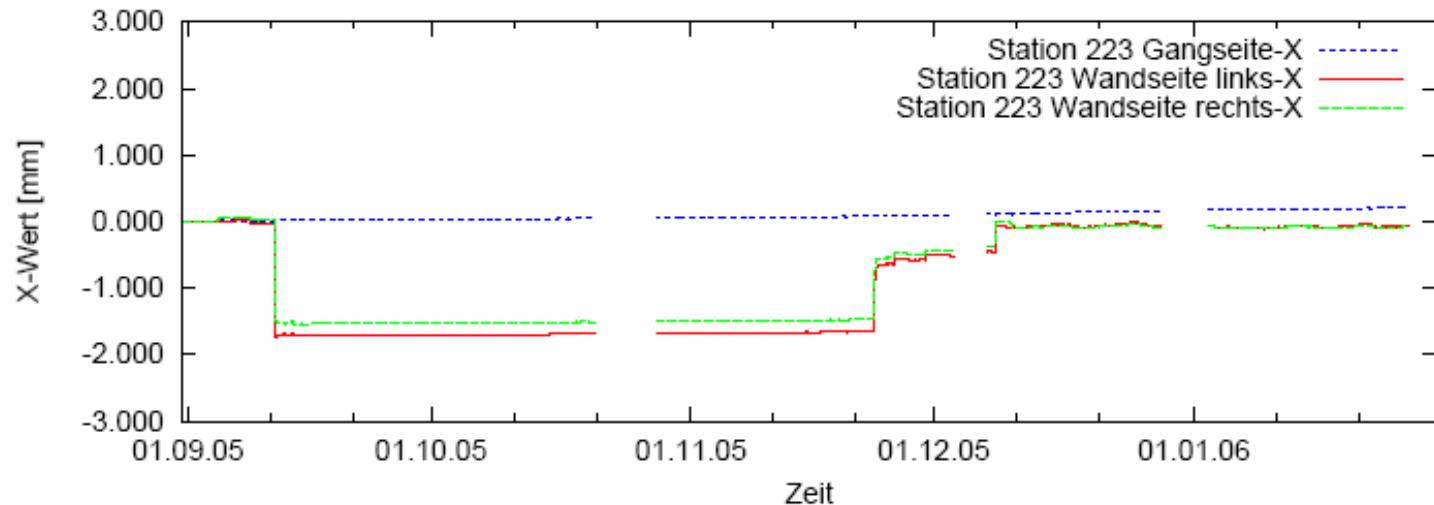
Results

Fourier Analysis

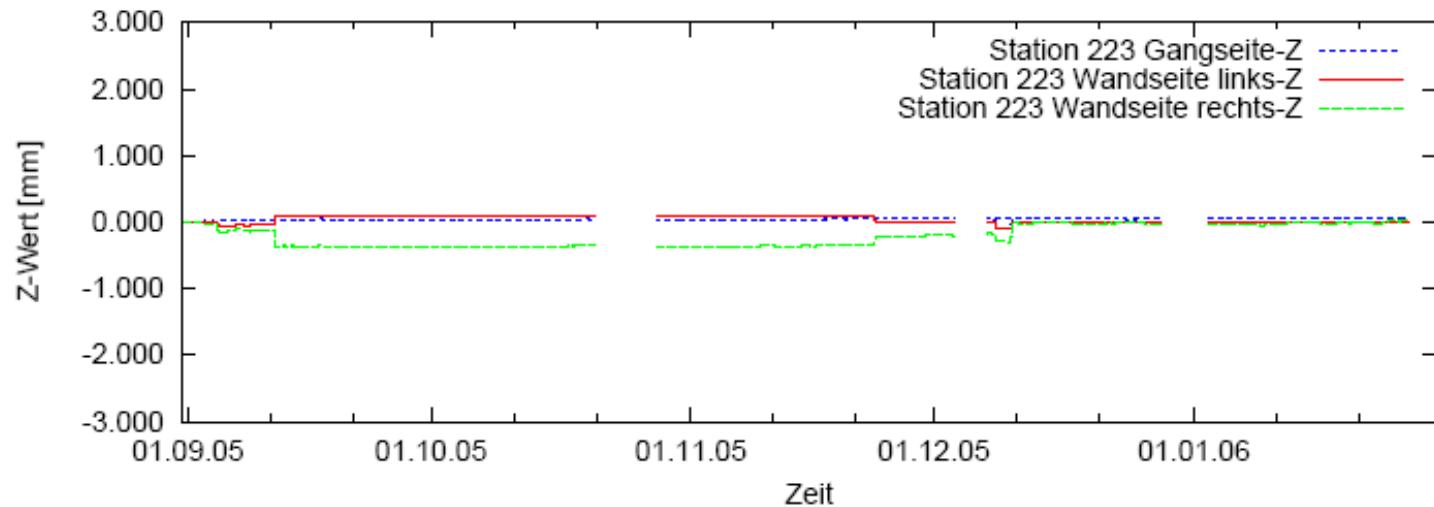
Correlation



Installation



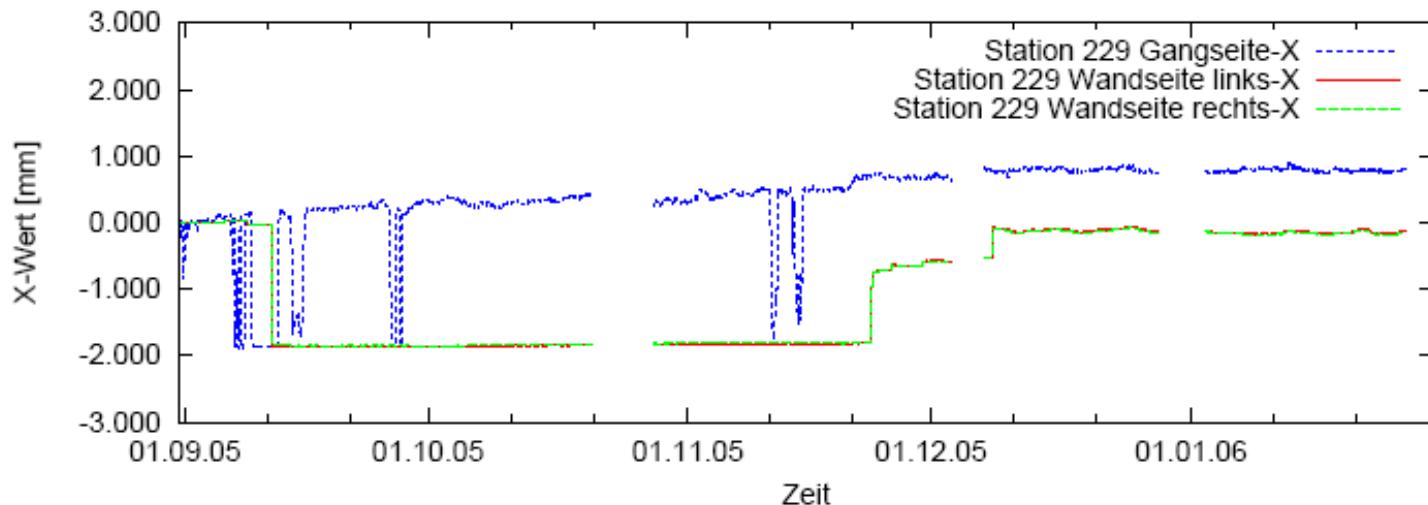
Results



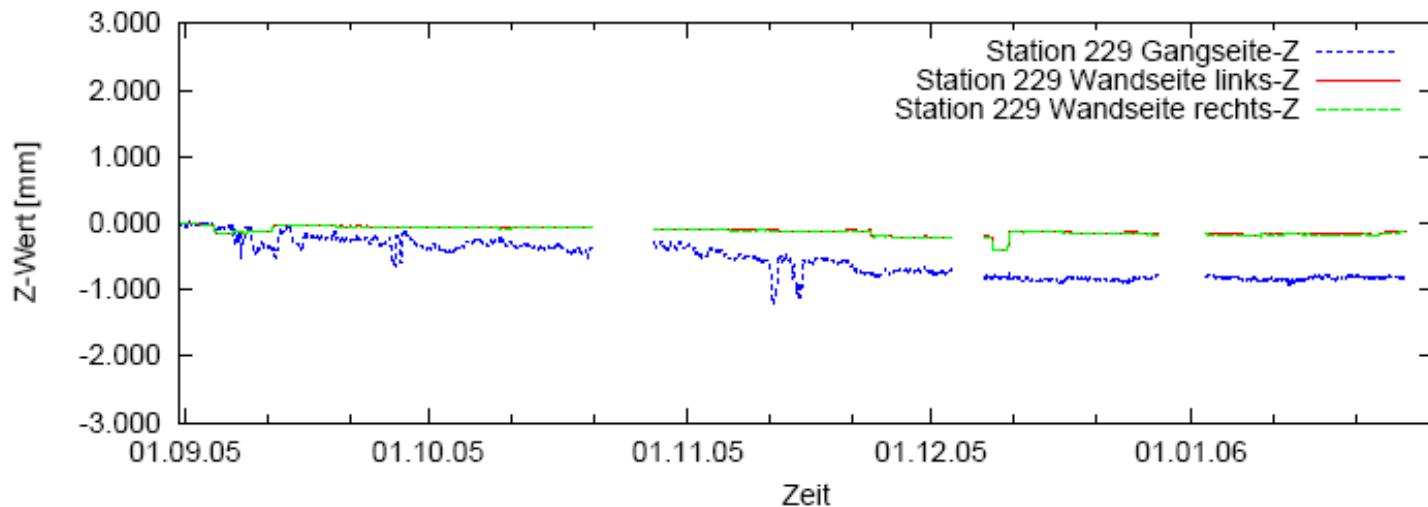
Fourier Analysis

Correlation

Installation



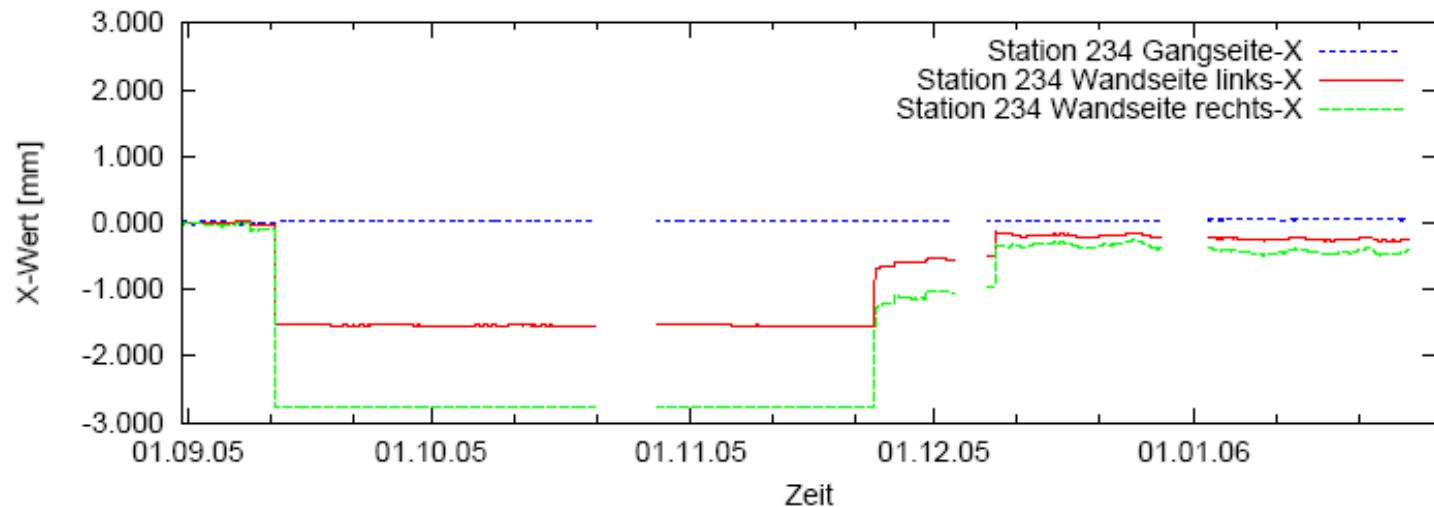
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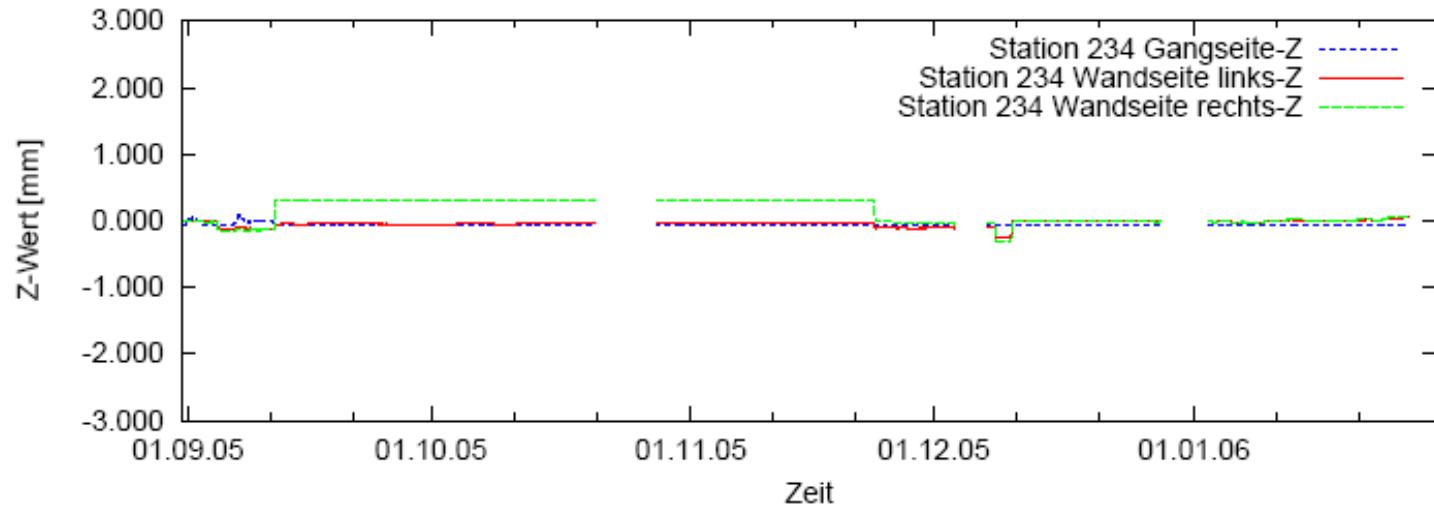
Fourier Analysis

Correlation

Installation



Results



Fourier Analysis

Correlation

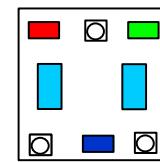
Installation

Alignment

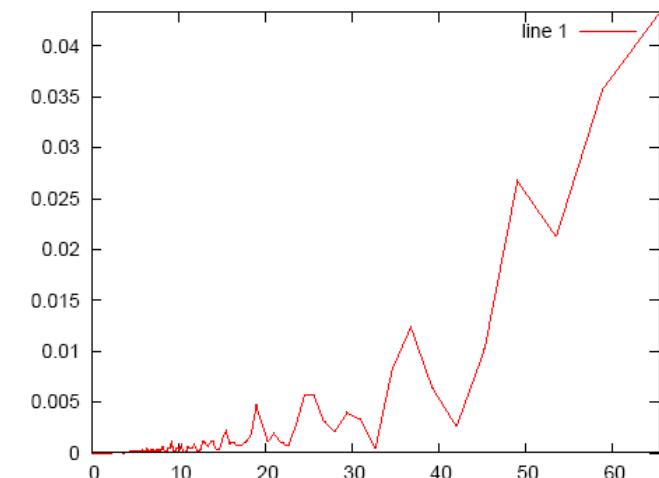
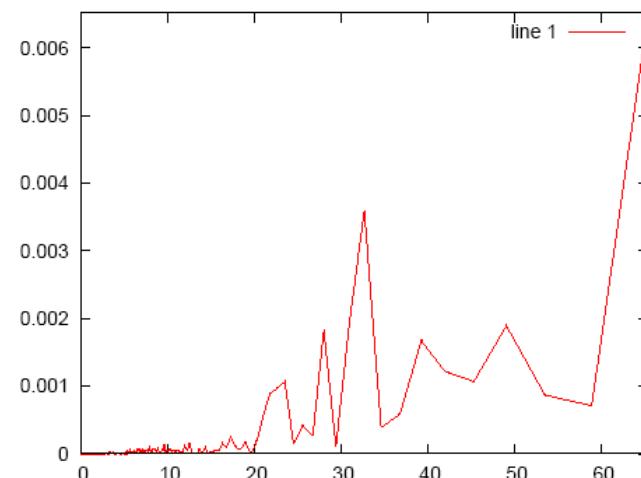
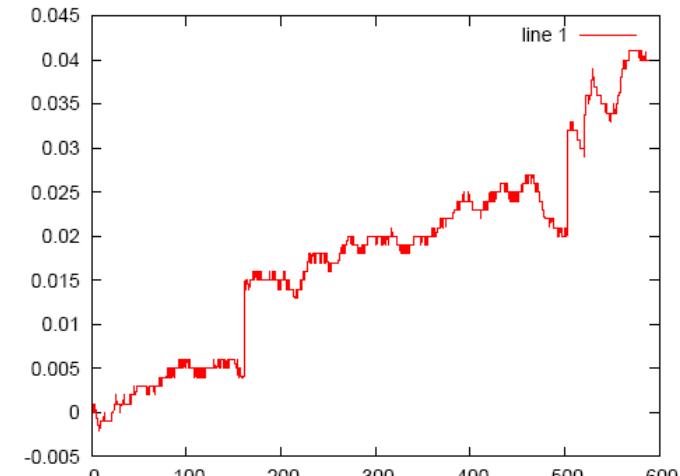
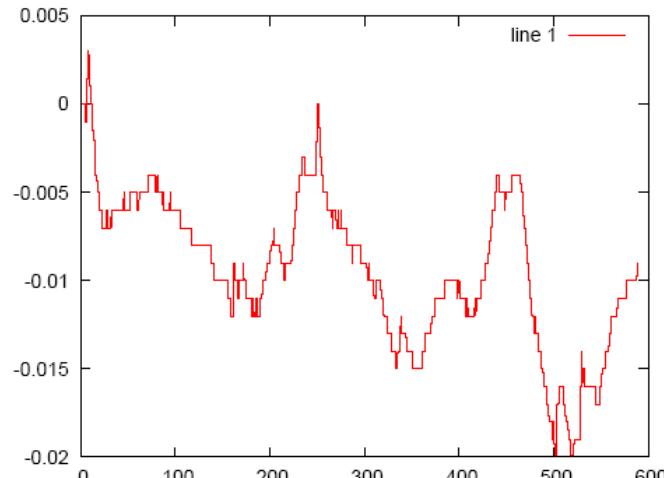
Results

Fourier Analysis

Correlation



Fourier-Transformation Platte 1 (203m): WLX, WLZ



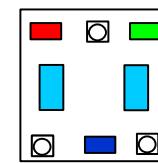
Installation

Alignment

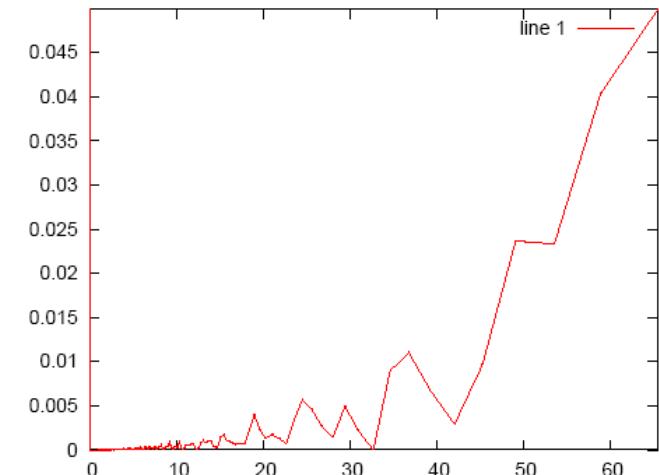
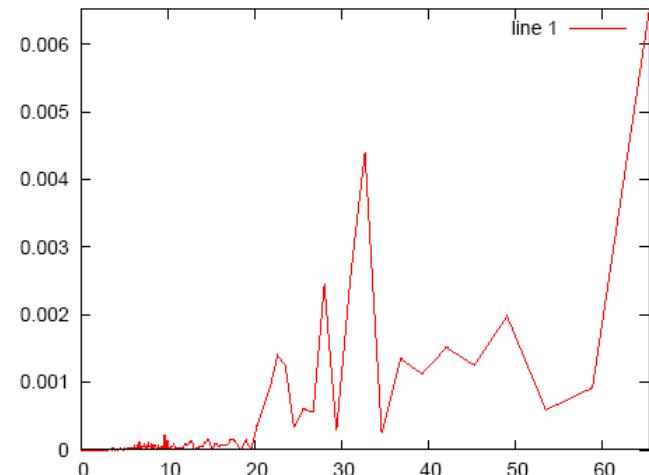
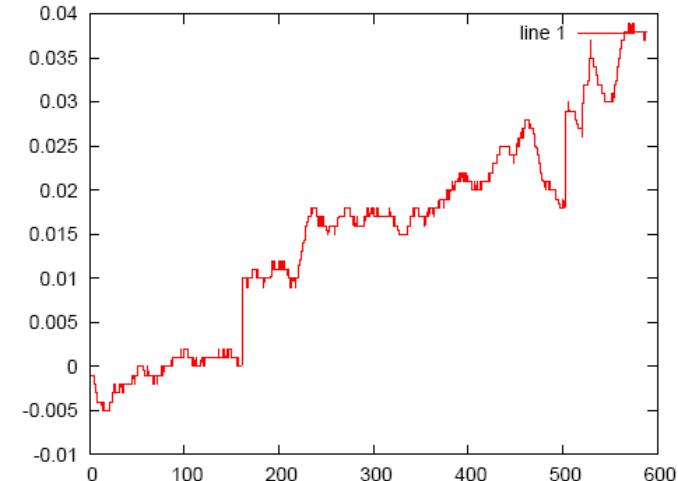
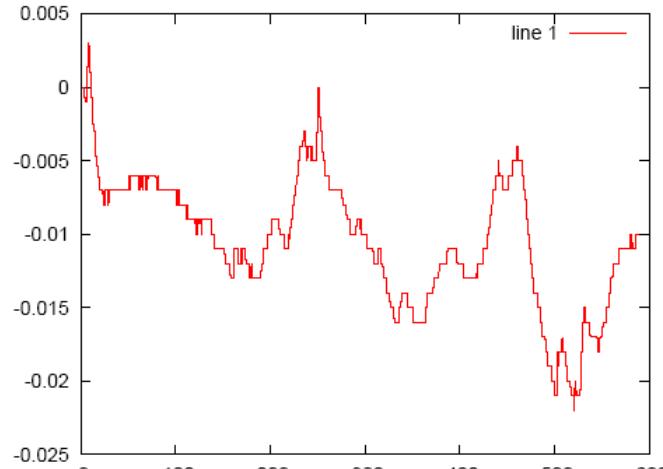
Results

Fourier Analysis

Correlation



Fourier-Transformation Platte 1: WRX, WRZ



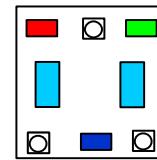
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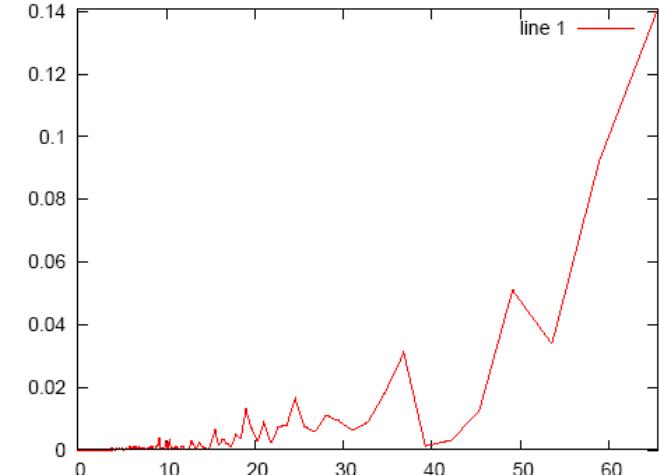
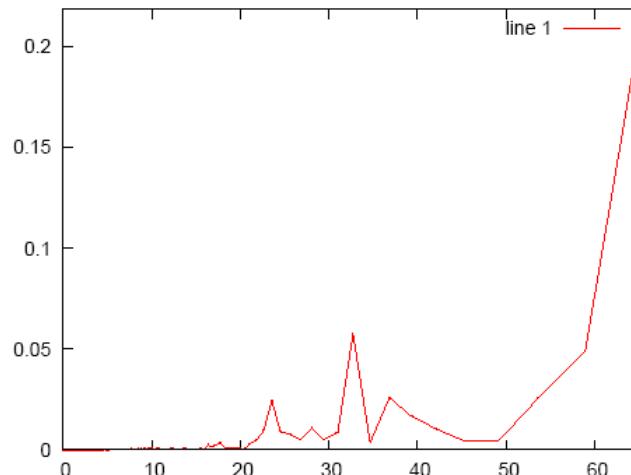
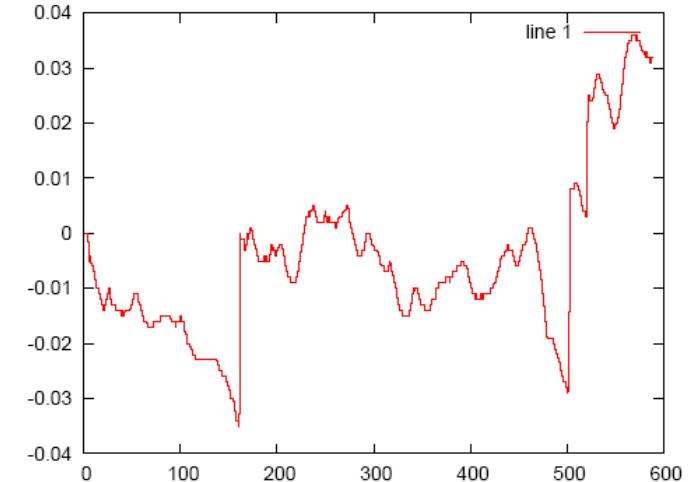
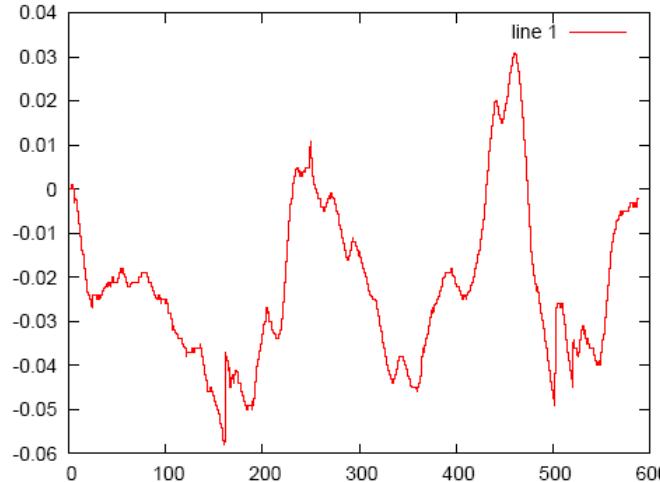
Results

Fourier Analysis

Correlation



Fourier-Transformation Platte 6 (229m): WLX, WLZ



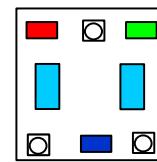
Installation

Alignment

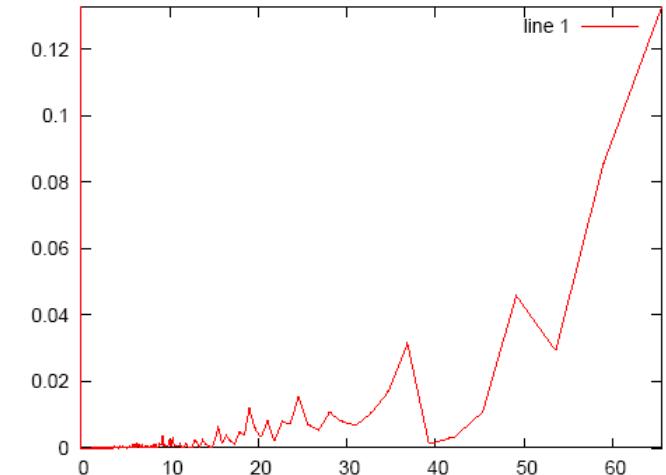
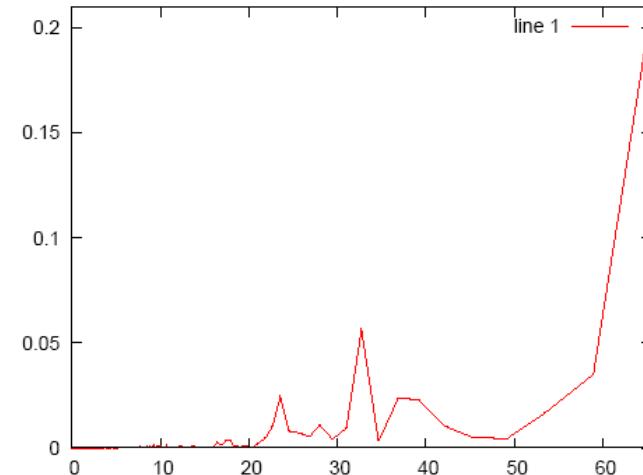
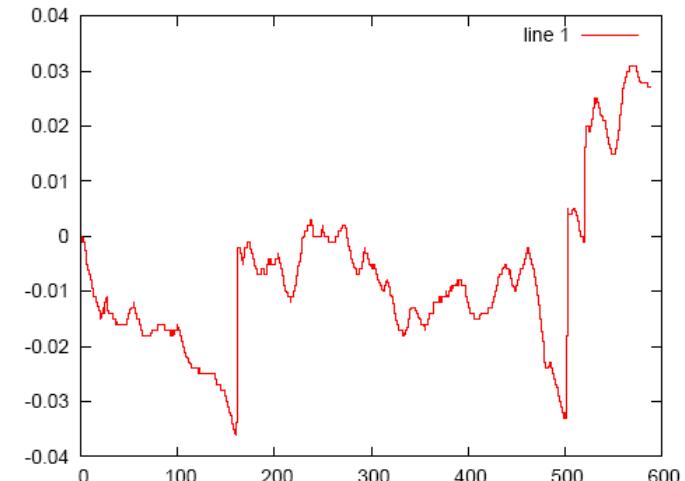
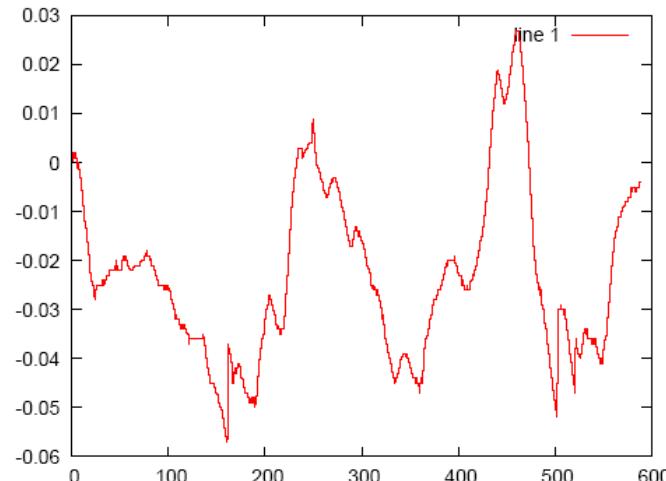
Results

Fourier Analysis

Correlation



Fourier-Transformation Platte 6: WRX, WRZ



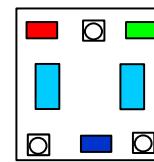
Installation

Alignment

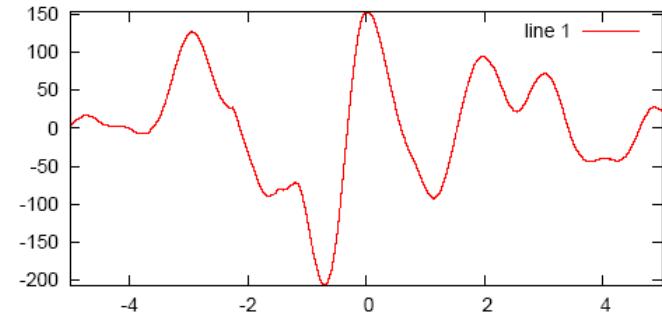
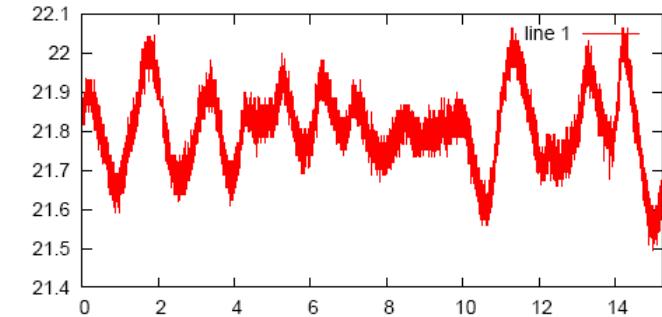
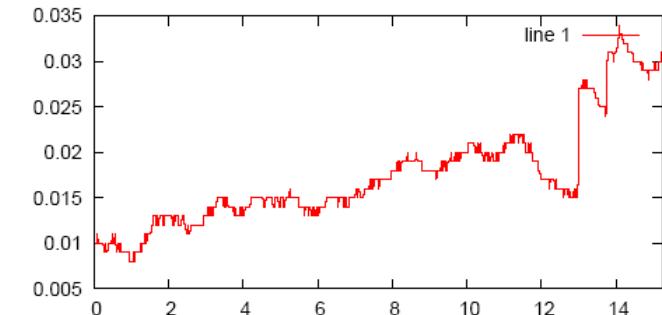
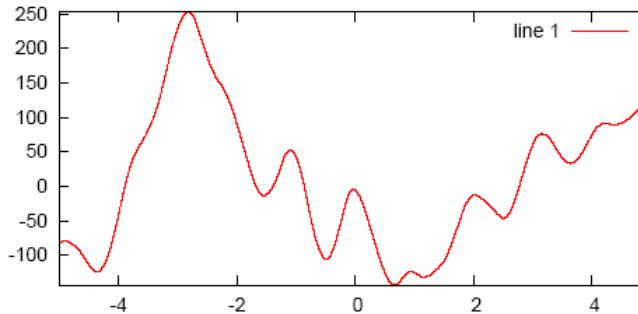
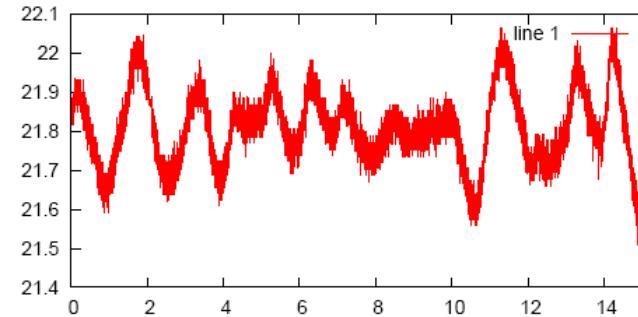
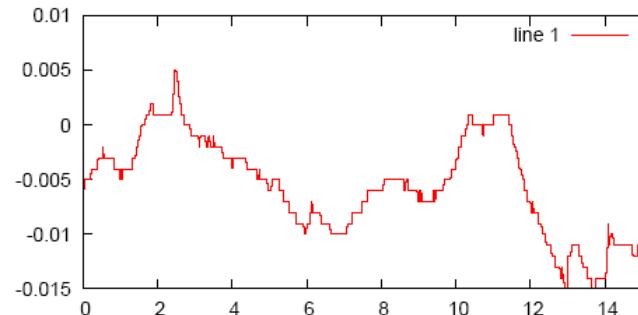
Results

Fourier Analysis

Correlation



Kreuzkorrelation Platte 1: WLX - Temp., WLZ – Temp.



Installation

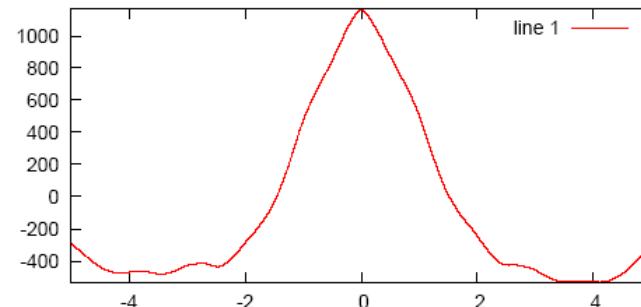
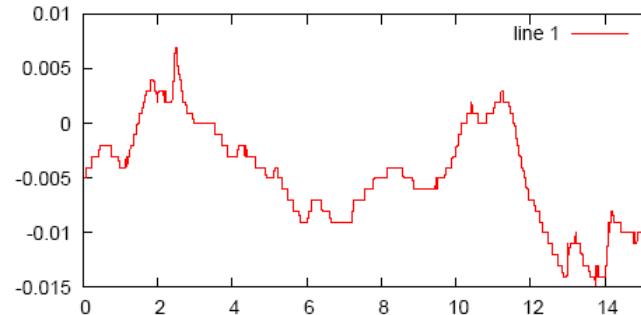
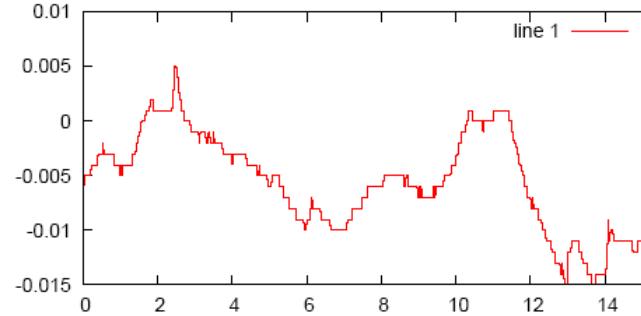
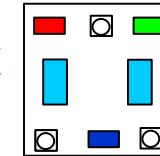
Alignment

Results

Fourier Analysis

Correlation

Kreuzkorrelation Platte 1: WLX - WRX



Next Steps:

- calculate more correlations with other machine parameters
- replace or repair defect sensors



THNX!

for your attention