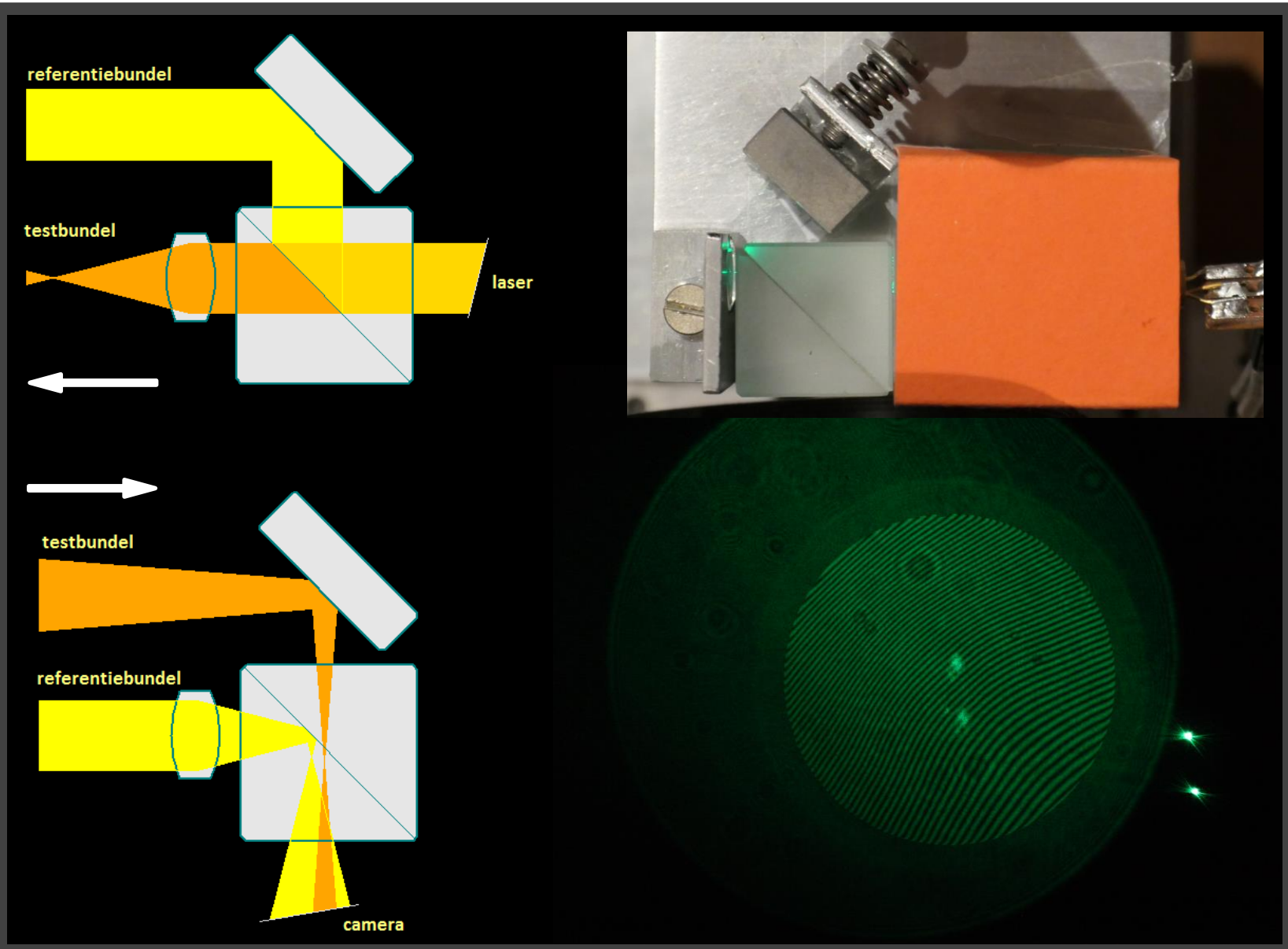
Paraboliseren

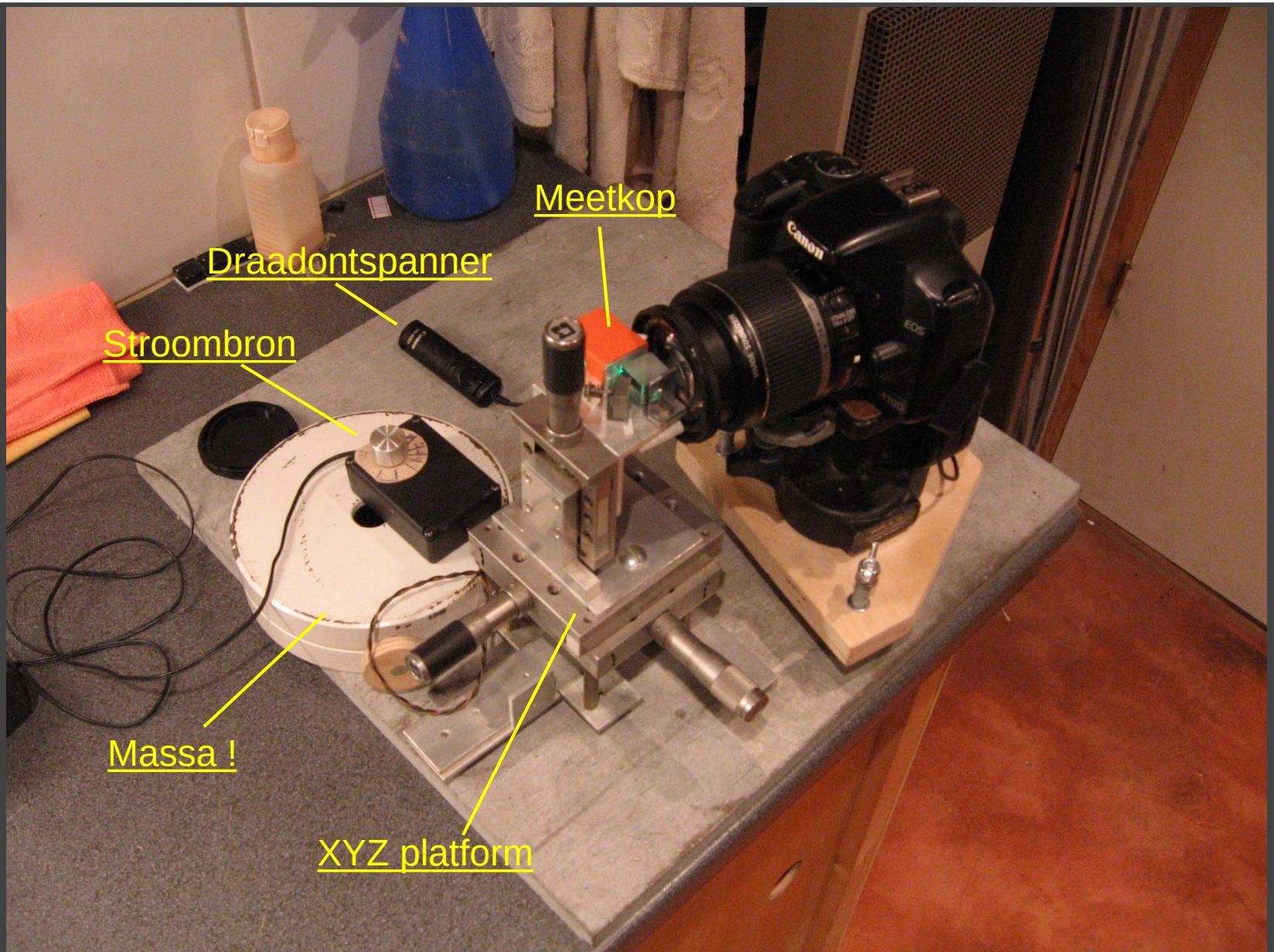
Met behulp van een interferometer

9 Maart 2019, Arjan te Marvelde (AtM)

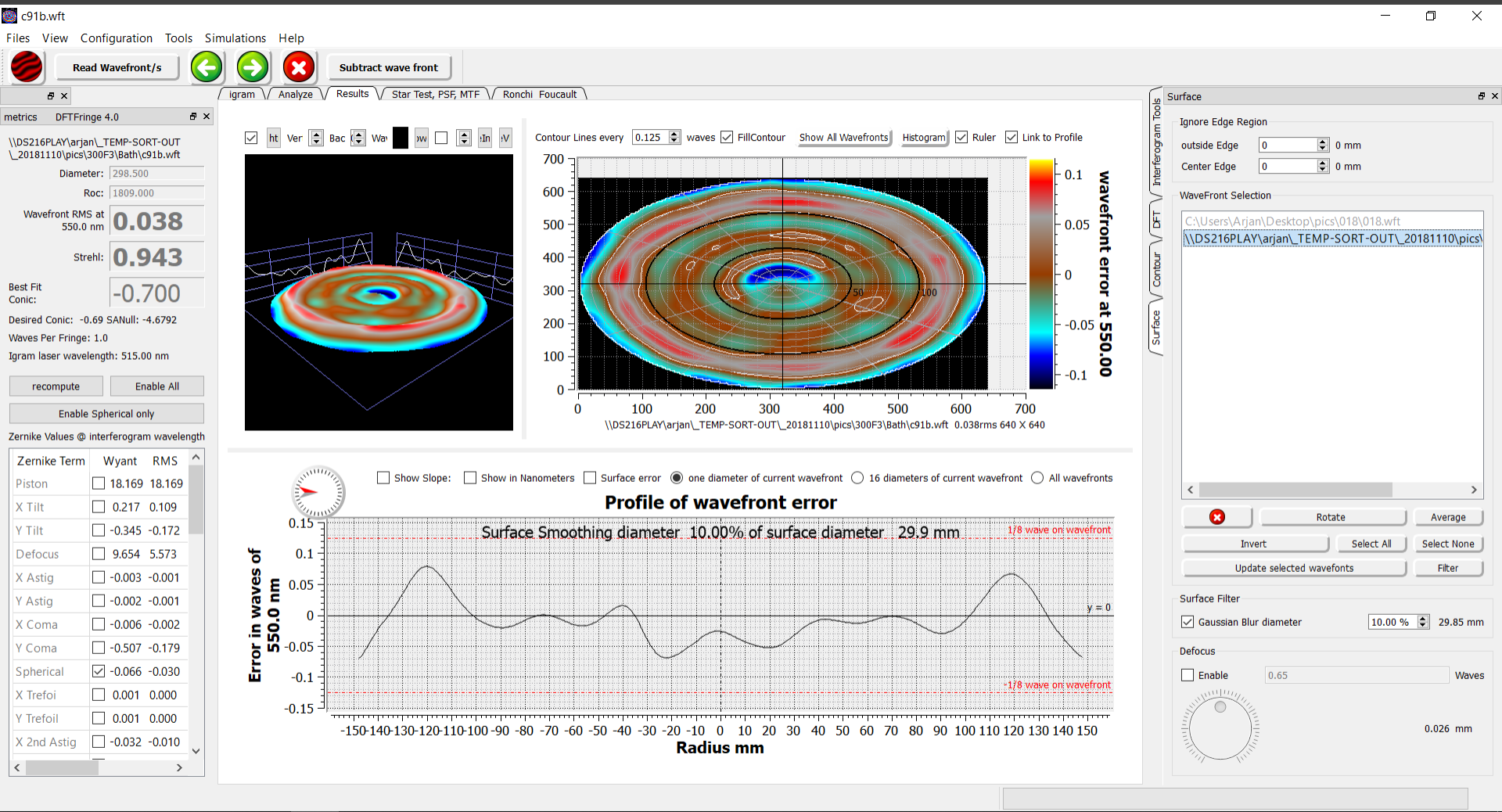
Bath in een notendop



Bath opstelling



Analyse met DFTFringe

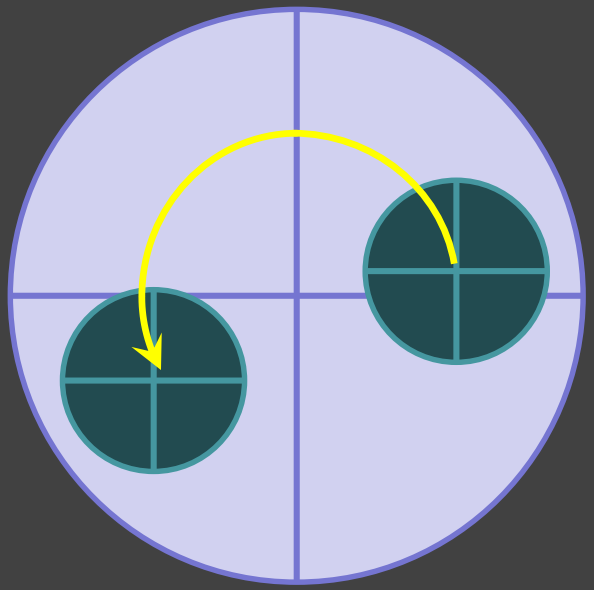


Polijst model

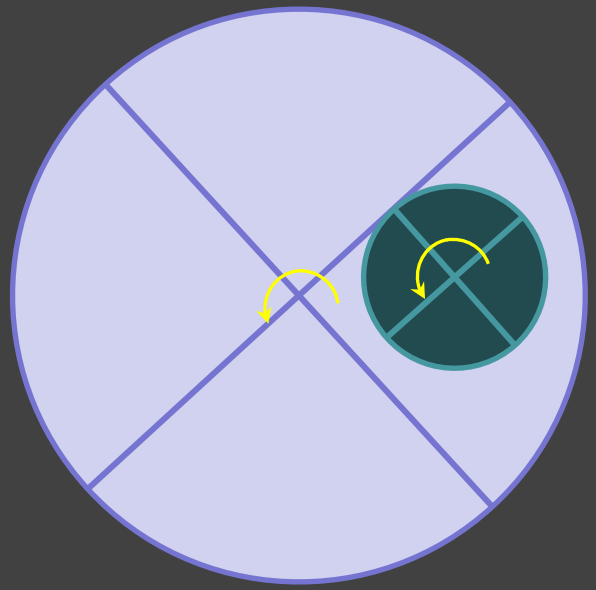
Preston's law: $\frac{\Delta d}{\Delta t} = c \cdot P \cdot v$

P en v constant: $\Delta d \sim \Delta t$

Frank W. Preston

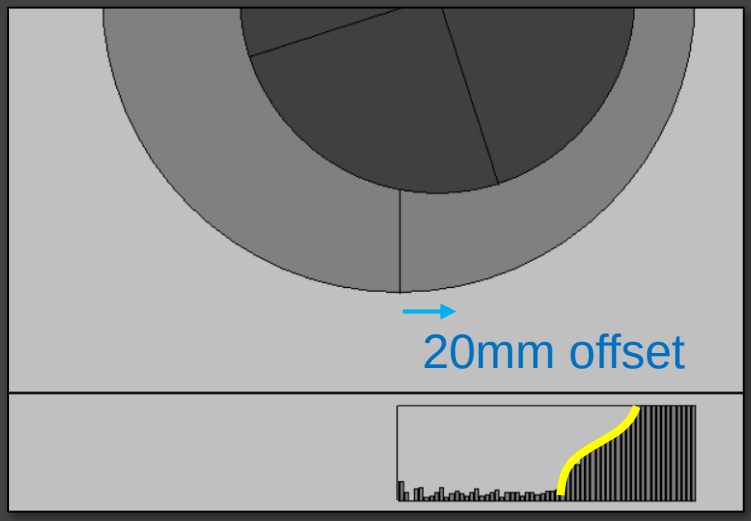


Hand: circulaire slagen

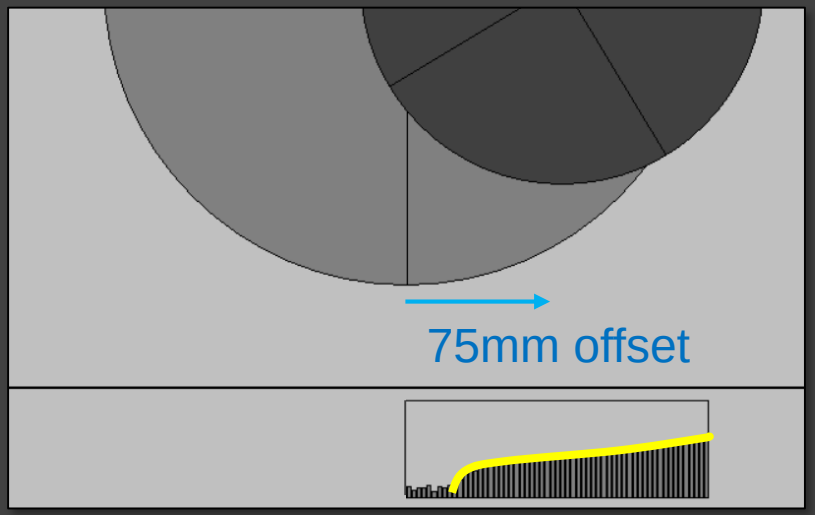


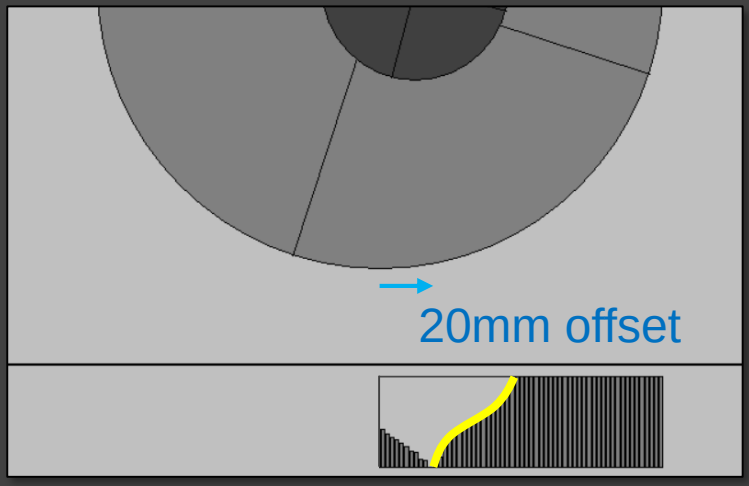
Machine: spinpolish

Spinpolish : *PolSim*

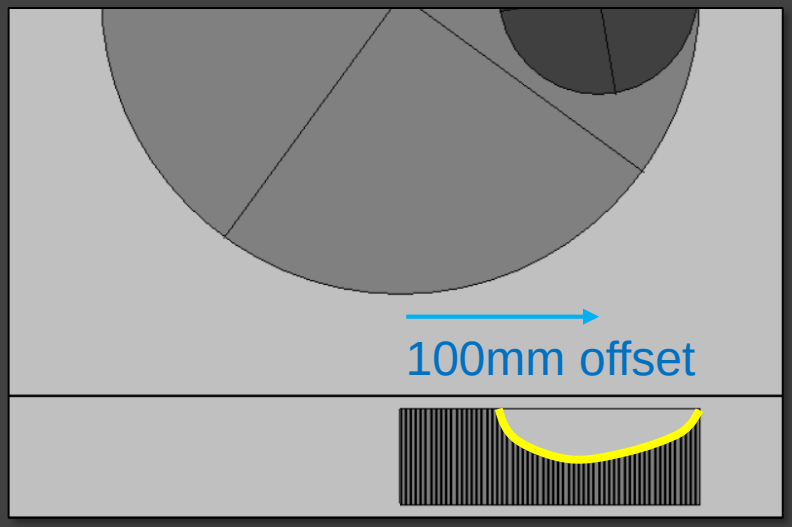


2/3 tool



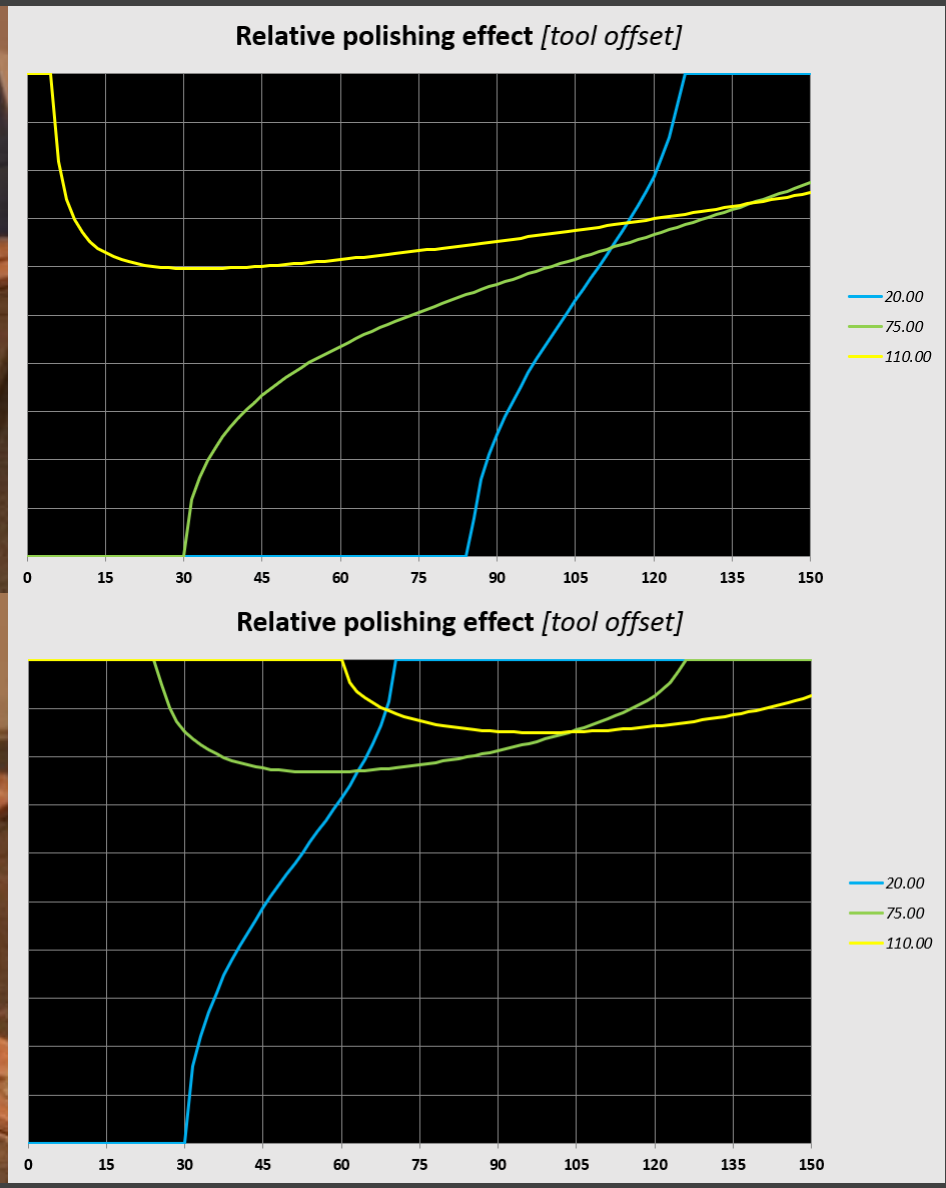


1/3 tool

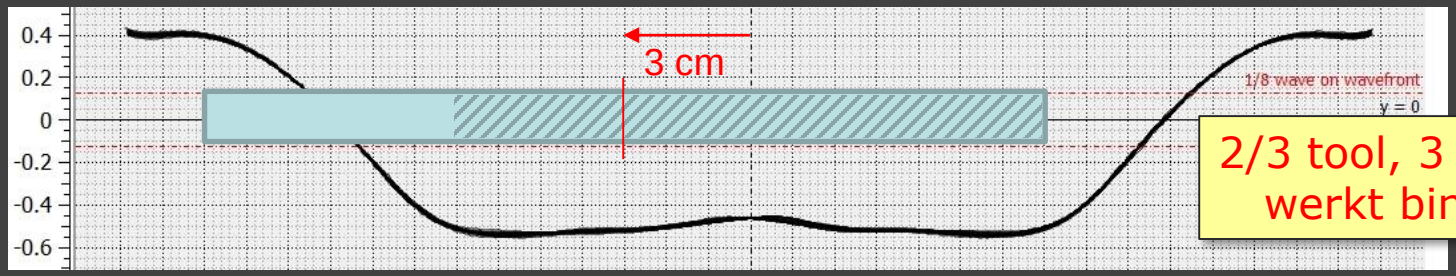


polsim.exe, Martin Cibulski

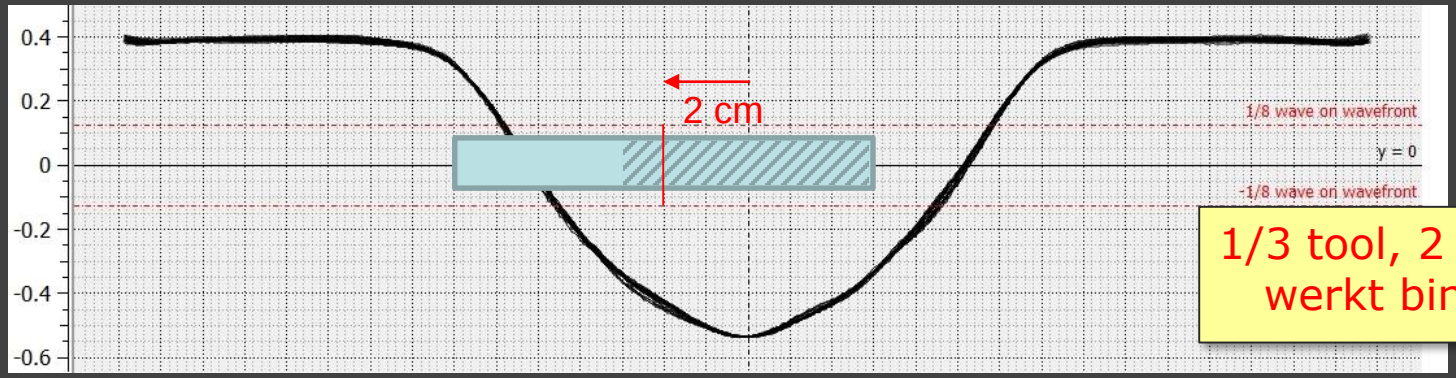
Handmatig: *Excel*



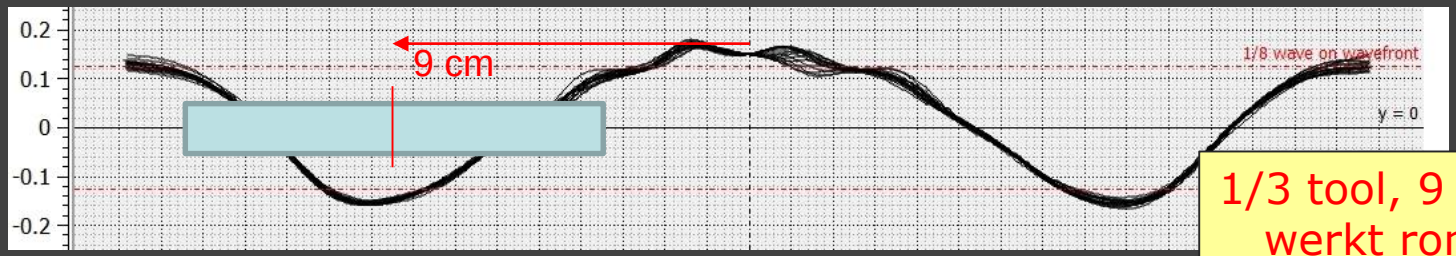
Gemeten effecten



2/3 tool, 3 cm offset, 30 min
werkt binnen 13 cm

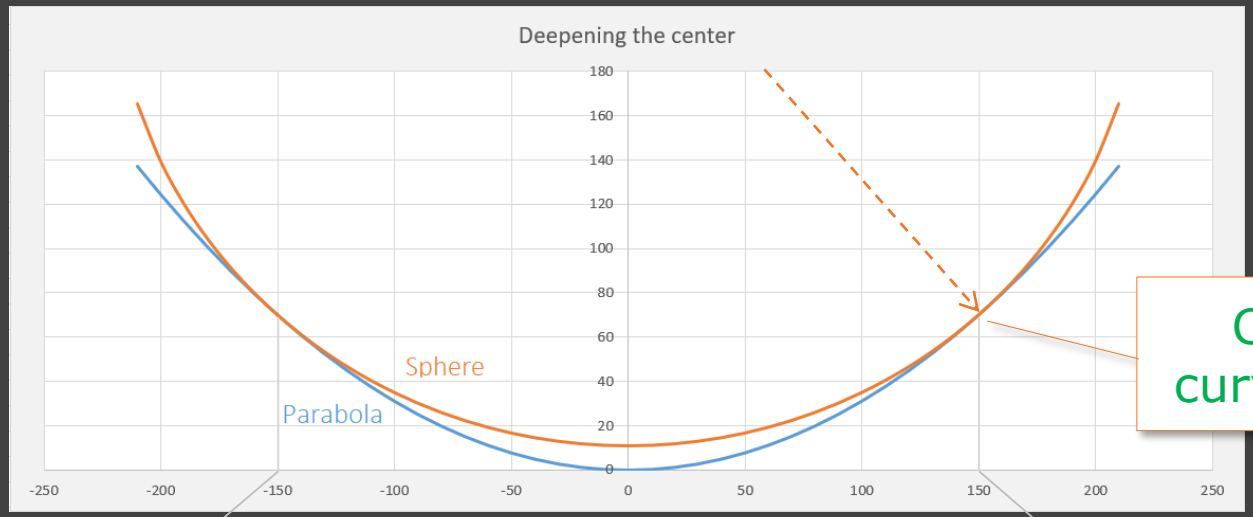


1/3 tool, 2 cm offset, 15 min
werkt binnen 7 cm

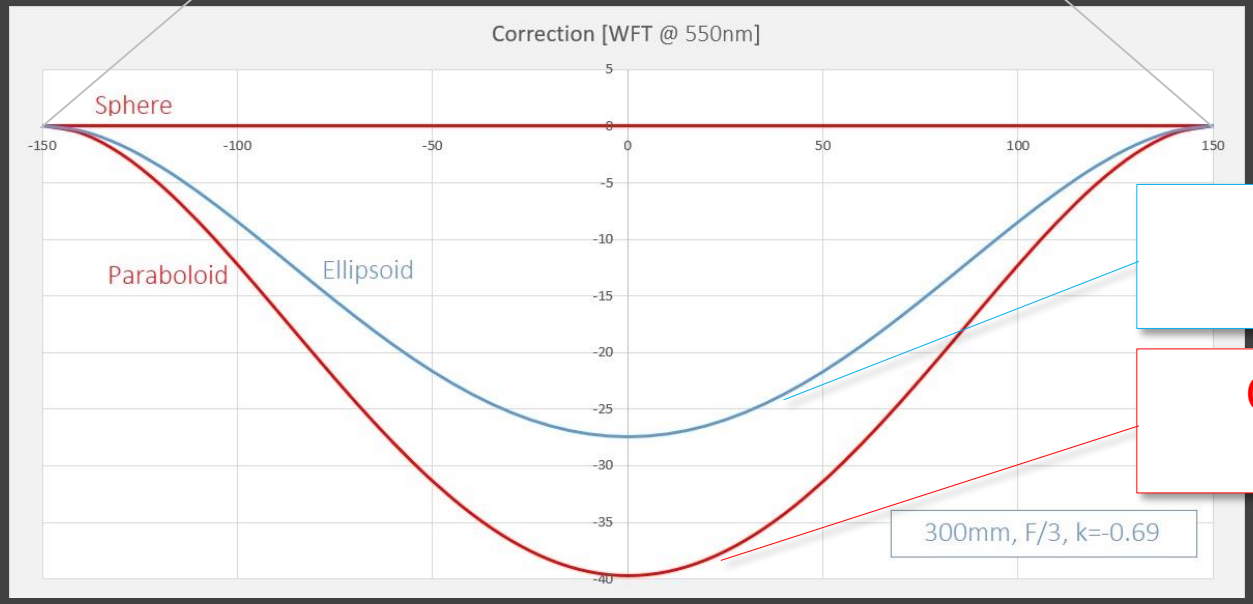


1/3 tool, 9 cm offset, 15 min
werkt rond 9 cm

Een 300mm - F/3



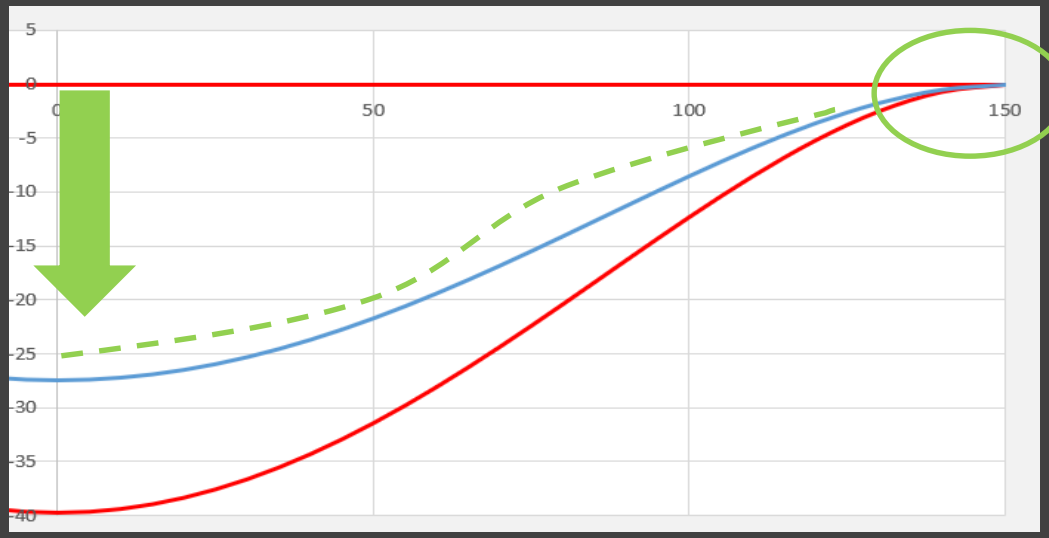
Centrum uitdiepen:
curves raken op de rand



Correctie ellips
➔ ca 7µm

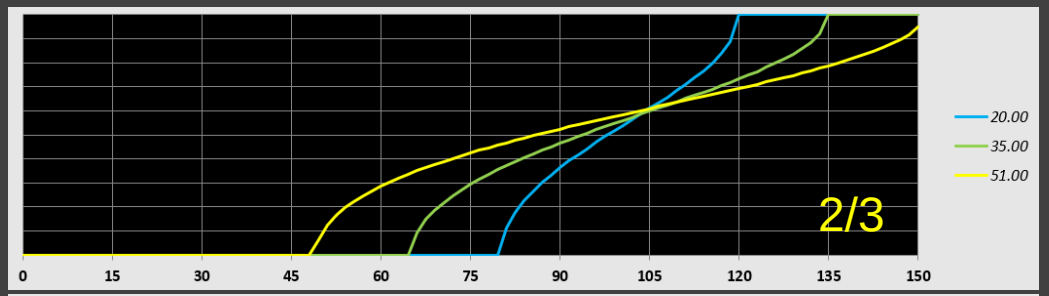
Correctie parabool
➔ ca 11µm

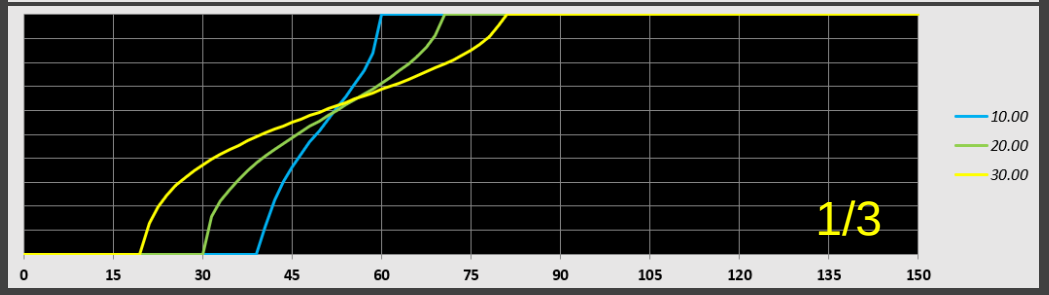
Een strategie



Start met een
goede rand!

Centrum uithollen;
hou curve in de gaten
relatief korte sessies



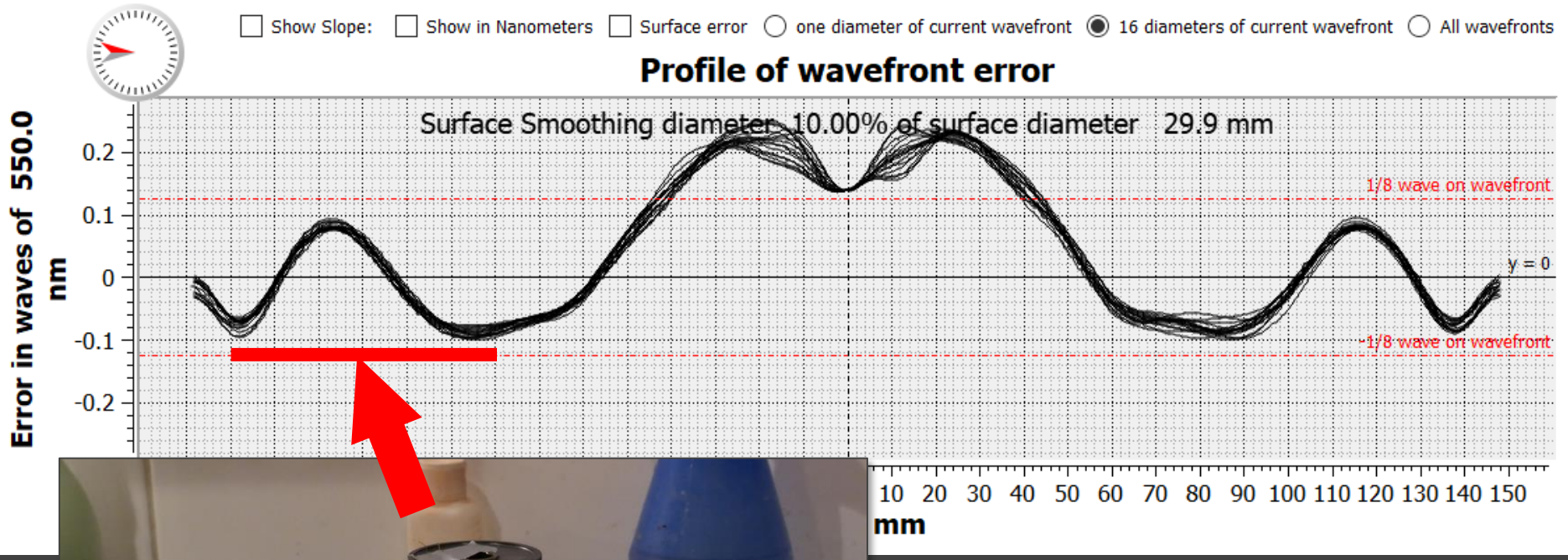


Gebruik afwisselend
2/3 en 1/3 tool

Centrum uitdiepen

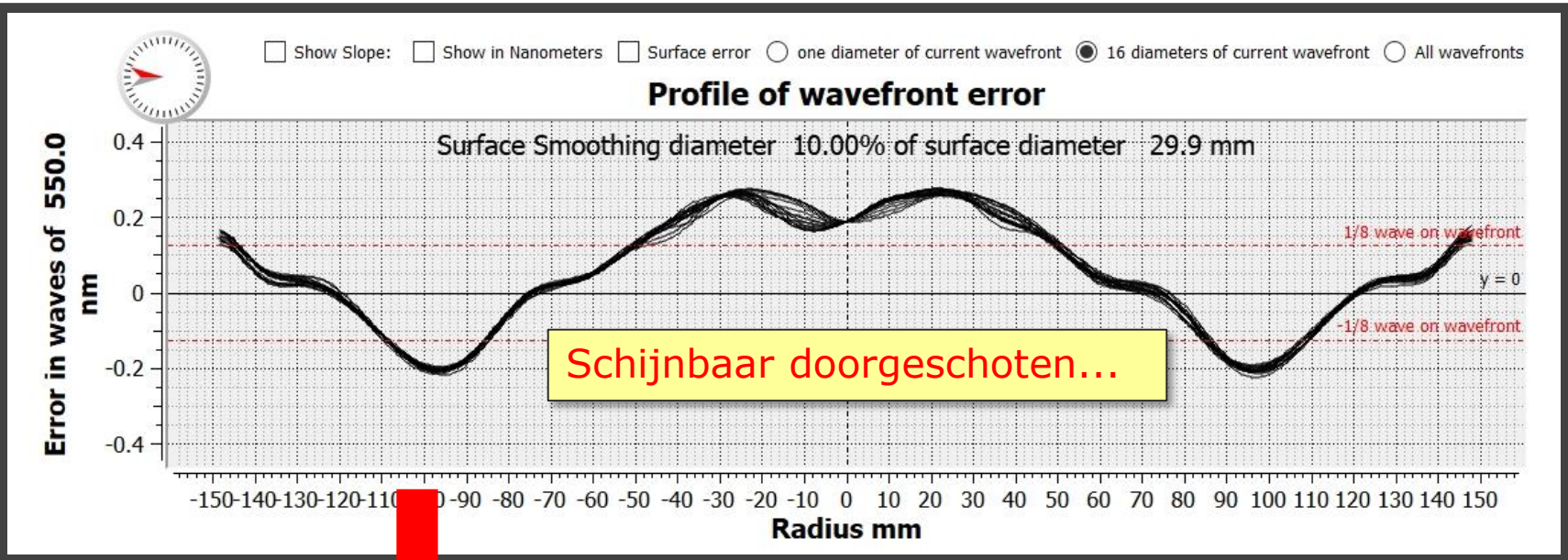
#	tool	offset	repeat	time	result	note
17	2/3	1-5cm, 5kg	1 rnd	30 min	k=-0.09	
18	2/3	1-5cm, 5kg (more wide strokes)	1 rnd	30 min	k=-0.09	
19	2/3	1-5cm, 5kg (more narrow strokes)	1 rnd	25 min	k=-0.10	
20	1/3	1-3cm, 1kg	2 rnd	20 min	k=-0.17	
21	2/3	3cm, 5kg	2 rnd	25 min	k=-0.17	
22	1/3	2-6cm, 1kg	2 rnd	30 min	k=-0.24	
23	2/3	3cm, 5kg	2 rnd	25 min	k=-0.25	
24	1/3	2-6cm, 1kg	1 rnd	30 min	k=-0.31	
25	1/3	2-9cm, 1kg	1 rnd	25 min	k=-0.34	
26	2/3	3cm, 5kg	2 rnd	30 min	k=-0.36	Deepens within 130mm, 0.8 waves, flat center
27	1/3	1-5 cm, 1kg	2 rnd	25 min	k=-0.46	Deepens within 85mm, 1.5 waves
28	2/3	3-10 cm, 5kg, smoothe/lower edge	1 rnd	10 min	k=-0.45	Does not work!
29	2/3	3 cm, 5kg	3 rnd	60 min	k=-0.51	Edge is much improved
30	1/3	1-4 cm, 1kg	2 rnd	30 min	k=-0.62	Deepens within 90mm, 2.0 waves
31	1/3	2 cm, 1kg	1 rnd	15 min	k=-0.67	Deepens within 70mm, 1.0 waves
32	2/3	3 cm, 5kg	1 rnd	20 min	k=-0.65	
33	1/3	2 cm, 1kg	2 rnd	30 min	k=-0.76	Ridge between 35-135 mm
34	1/3	8.5 cm, 1kg, + some narrower	1 rnd	10 min	k=-0.75	...reduced
35	1/3	8.5 cm, 1kg, + some licks 13.5 cm off	1 rnd	15 min	k=-0.73	...reduced, center is rising
36	1/3	8.5cm, 1kg	1 rnd	15 min	k=-0.70	Central hill, slope 30-70mm, 0.4 wave
37	1/3	2 cm, 1kg	1/2 rnd	7 min	k=-0.73	
38	1/3	9-11 cm, 1kg	1 rnd	15 min	k=-0.70	Strehl 80%
39	2/3	3.5 cm, 5kg	1 rnd	10 min	k=-0.69	Slope hardly less, need small tool!

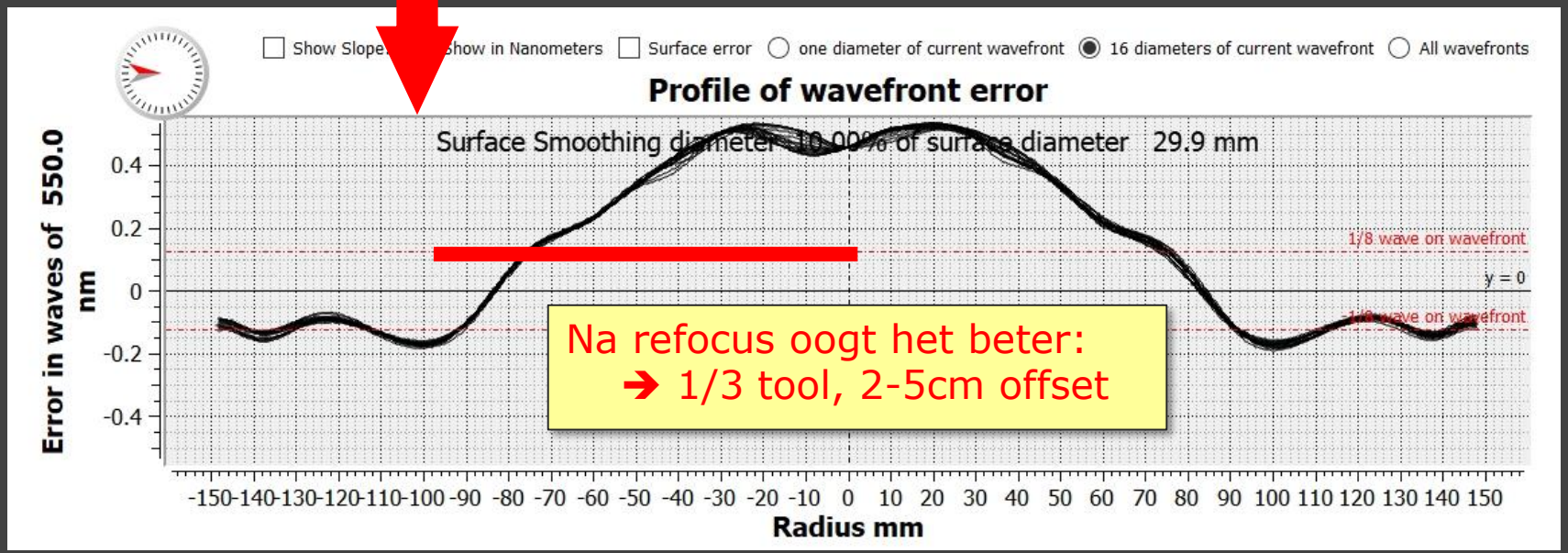
Retoucheren van zones



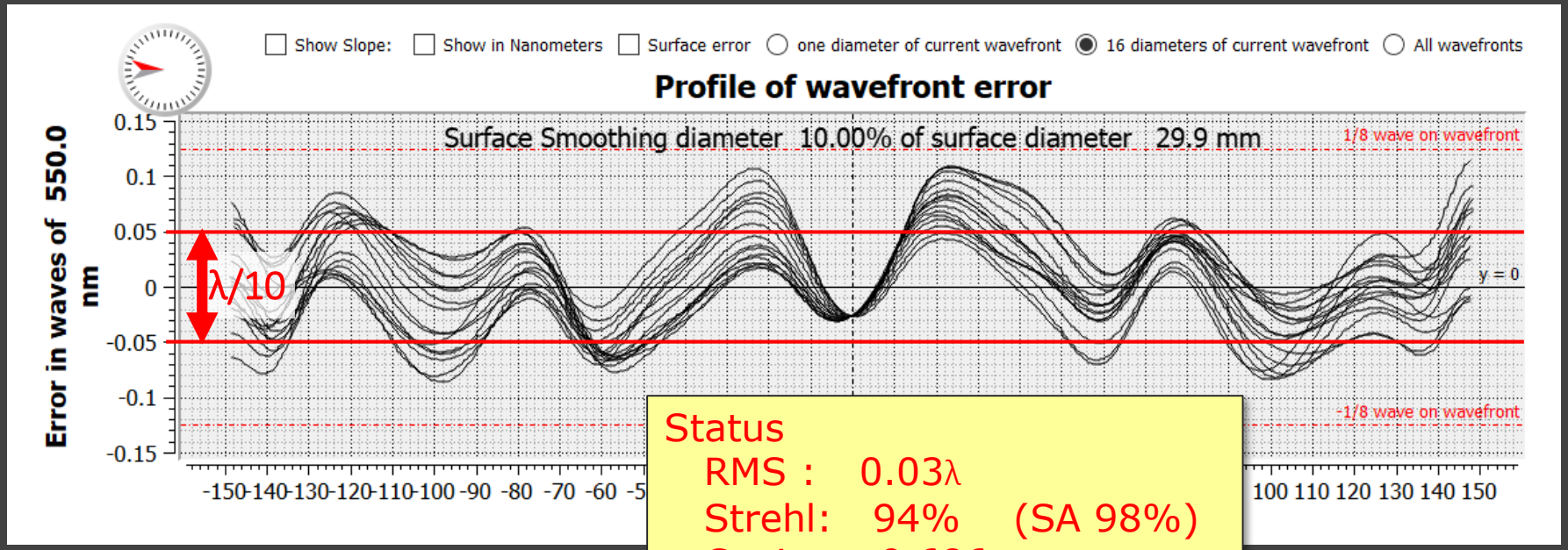
Gebruik een kleine tool voor retoucheerwerk:
1/5 diameter, + 300gr.

Retoucheren van zones





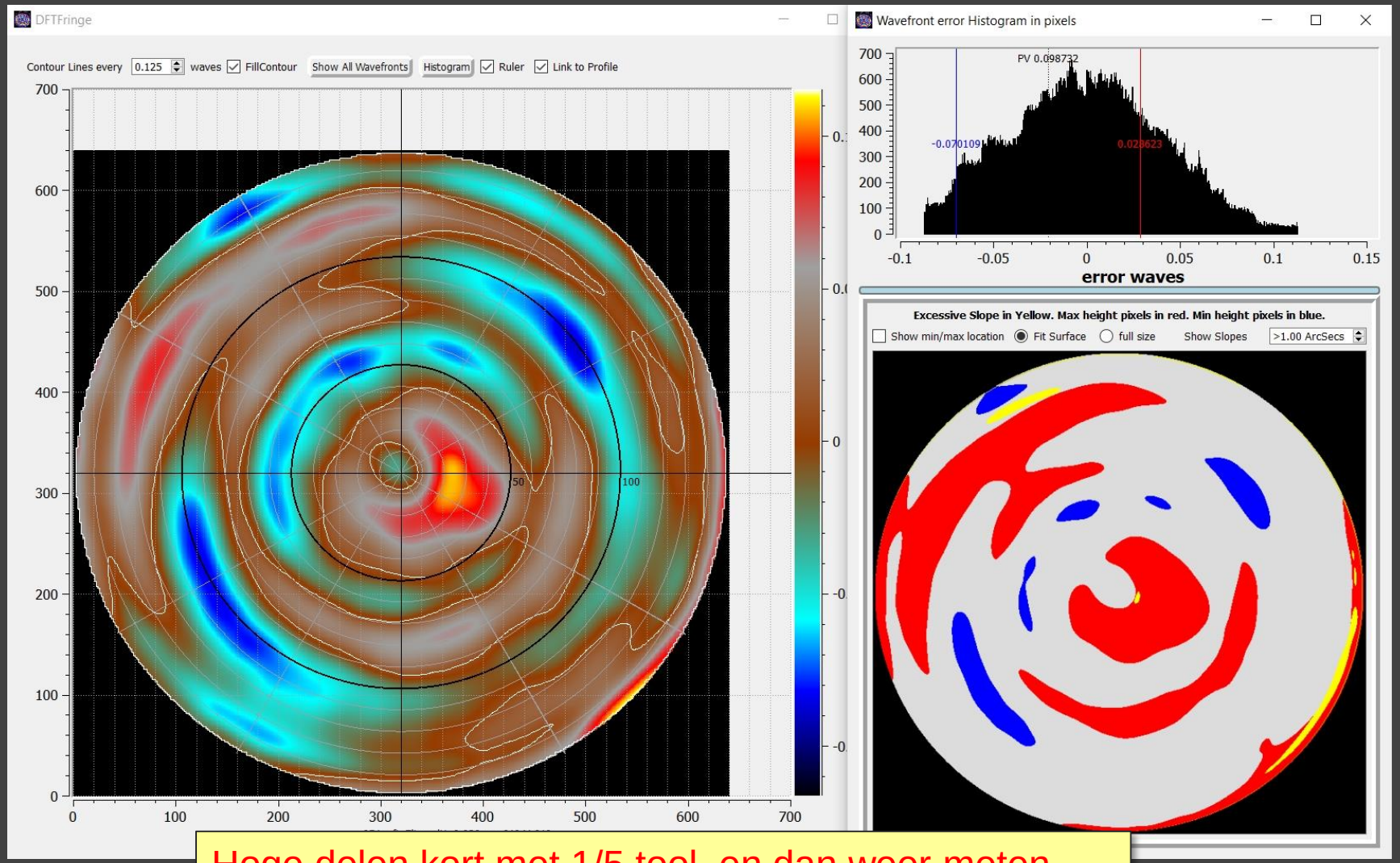
De laatste loodjes



- Analyses zakken in de ruis:
  ➔ dus zorgvuldiger meten en evt. filteren

- Spreiding is ongeveer net zo groot als de afwijkingen
  ➔ verder gaan met locaal retoucheren (1/5 tool)

De laatste loodjes



Hoge delen kort met 1/5 tool, en dan weer meten...