

2021/07/01

Angular sweep	Mirror rotation angle	Power detector	Implemented
		Amplitude detector	
		Demodulated signal	
	Gouy phase at detector	Power detector	Implemented
		Amplitude detector	
		Demodulated signal	
Transfer function			

0. Select length or alignment simulation.

Length Angular

1. Select simulation mode.

kifo_classification_alignment
 Sweep Transfer function
kifo_sec_swan_setting
Select what to sweep
 Mirror misalign Gouy phase at Detector
kifo_sec_swan_mirot_setting
Select mirot

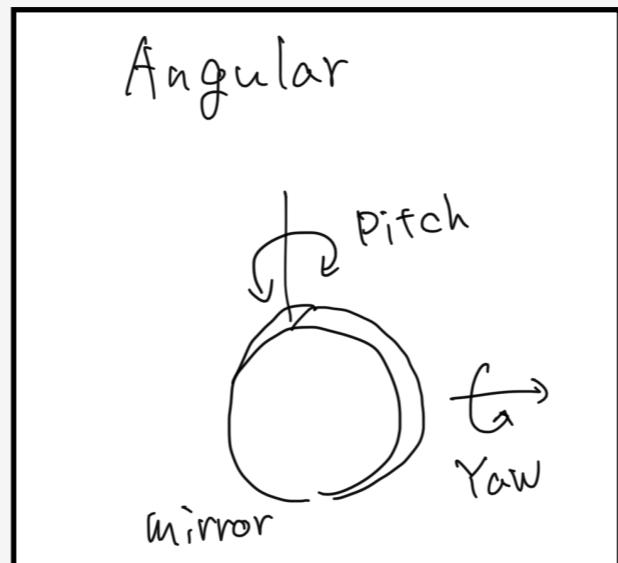
Power detector [W] Amplitud detector Demodulated signal [A.U.]

kifo_sec_swan_mirot_power_setting

select "port", "QPD divided axis" - +

01 detection port = REFL QPD divide direction = pitch

02 detection port = AS QPD divide direction = pitch



attr ITMX xbeta delta-x
Sweep $-1e^{-6} \sim 1e^{-6}$

sampling num 1000
 xaxis lin xaxis log
 yaxis lin yaxis log
xaxis range -1e-06 to 1e-06

2. Select which mirror

Misalign mirror

misalign_mirror_selection_menu

select "port", "misalignment axis"

Templates Optional DoF

misalign_dof_box_2
Optional DoF
misalign_dof_box_2
select "port", "misalignment axis" - +
01 mirror = ITMX
PR2
PR3
ITMX
ITMY
ETMX
ETMY
SRM
derection = + pitch
derection = + pitch
Plot

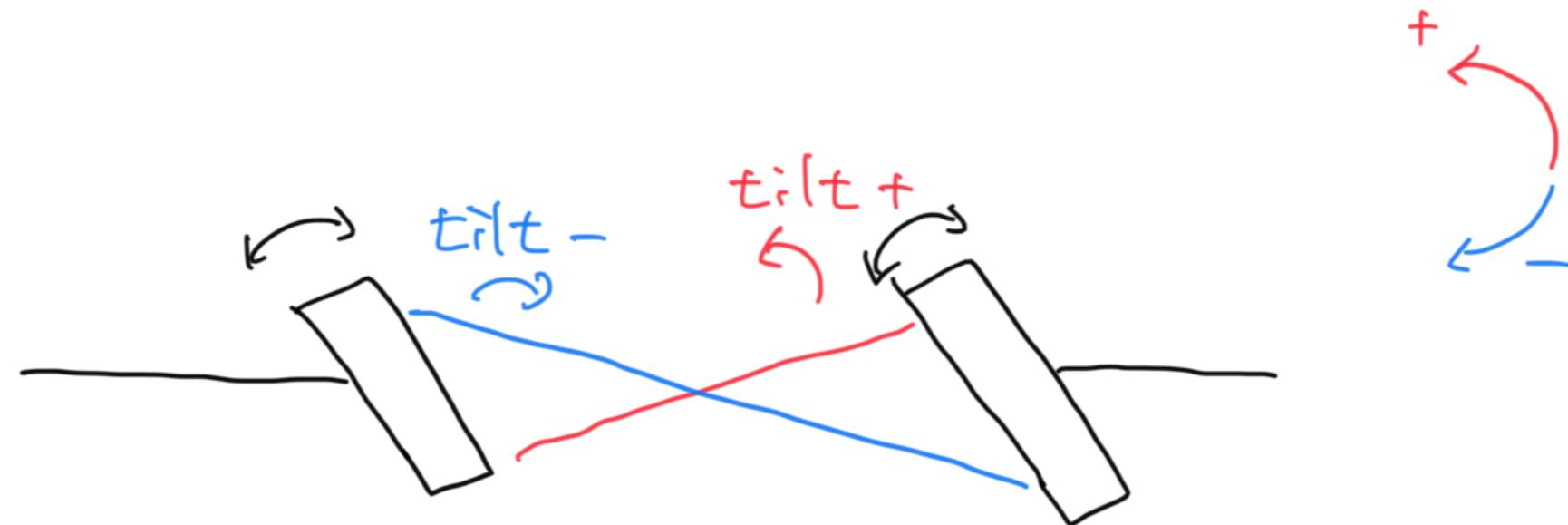
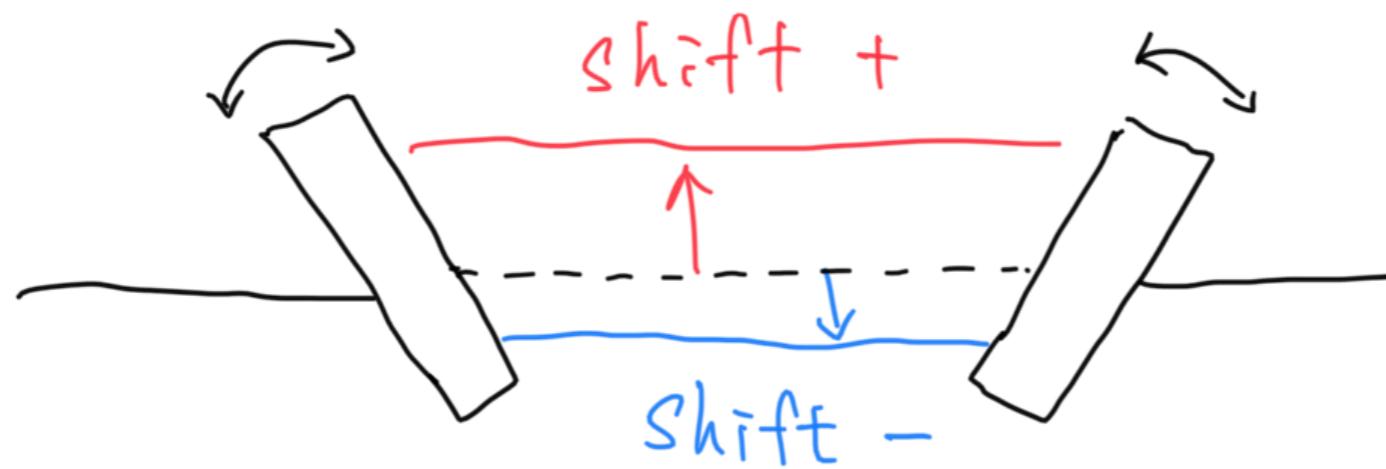
misalign_dof_box_1

X-ARM Cavity shift +
Y-ARM Cavity shift +

rotate direction pitch
rotate direction pitch

Plot

templates



Sweep Transfer function

kifo_sec_swan_setting
Select what to sweep
 Mirror misalign Gouy phase at Detector

kifo_sec_swan_gouyp_setting
Select gouy
 Power detector [W] Amplitud detector Demodulated signal [A.U.]

kifo_sec_swan_gouyp_power_setting
select "port", "QPD divided axis" - +

01 detection port = REFL QPD divide direction = pitch
02 detection port = AS QPD divide direction = pitch

attr space δx $\delta \Delta x$
 (g_y)

sweep $-90^\circ \sim 90^\circ$

sampling num 1000
 xaxis lin xaxis log
 yaxis lin yaxis log
xaxis range -90 to 90

2. Select which mirror

Misalign mirror

misalign_mirror_selection_menu
select "port", "misalignment axis"

Templates Optional DoF

misalign_dof_box_1_gouyp
X-ARM Cavity shift + ITMX rotate angle 0 ETMX rotate angle 0
Y-ARM Cavity aligned ITMY rotate angle 0 ETMY rotate angle 0

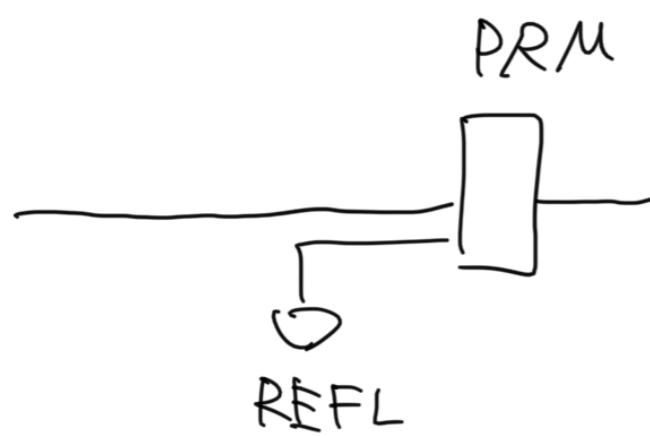
Plot
sampling num 1000

Templates Optional DoF

misalign_dof_box_2_gouyp
Angular DoF - +

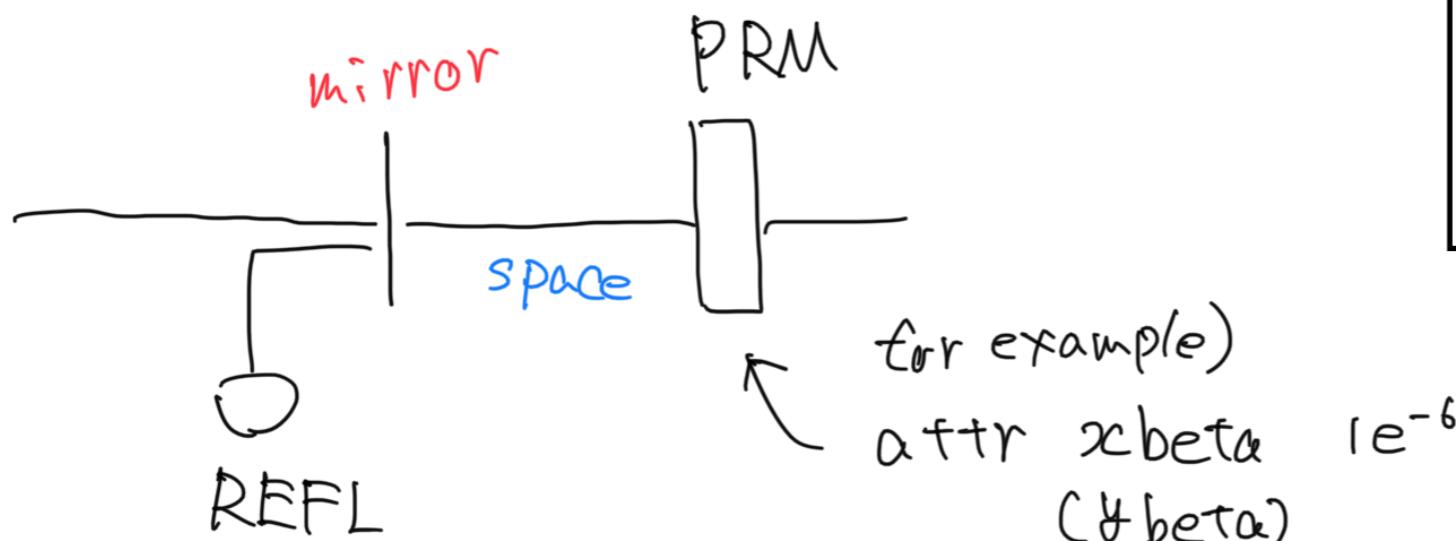
01 mirror = ITMX PR2 PR3 ITMX ITMY ETMX ETMY SRM SR2 SR3 bs1
derection = + pitch rotate angle = 1e-6
02 mirror = ITMX PR2 PR3 ITMX ITMY ETMX ETMY SRM SR2 SR3 bs1
derection = + pitch rotate angle = 1e-6

Plot
sampling num 1000
 xaxis lin xaxis log



} mirror : reflectance 0
 transmittance 1
 space : length 0

→ added mirror
and space components



attr	space	g_x (g_y)	δ_{fa_x}
sweep			$-90^\circ \sim 90^\circ$

