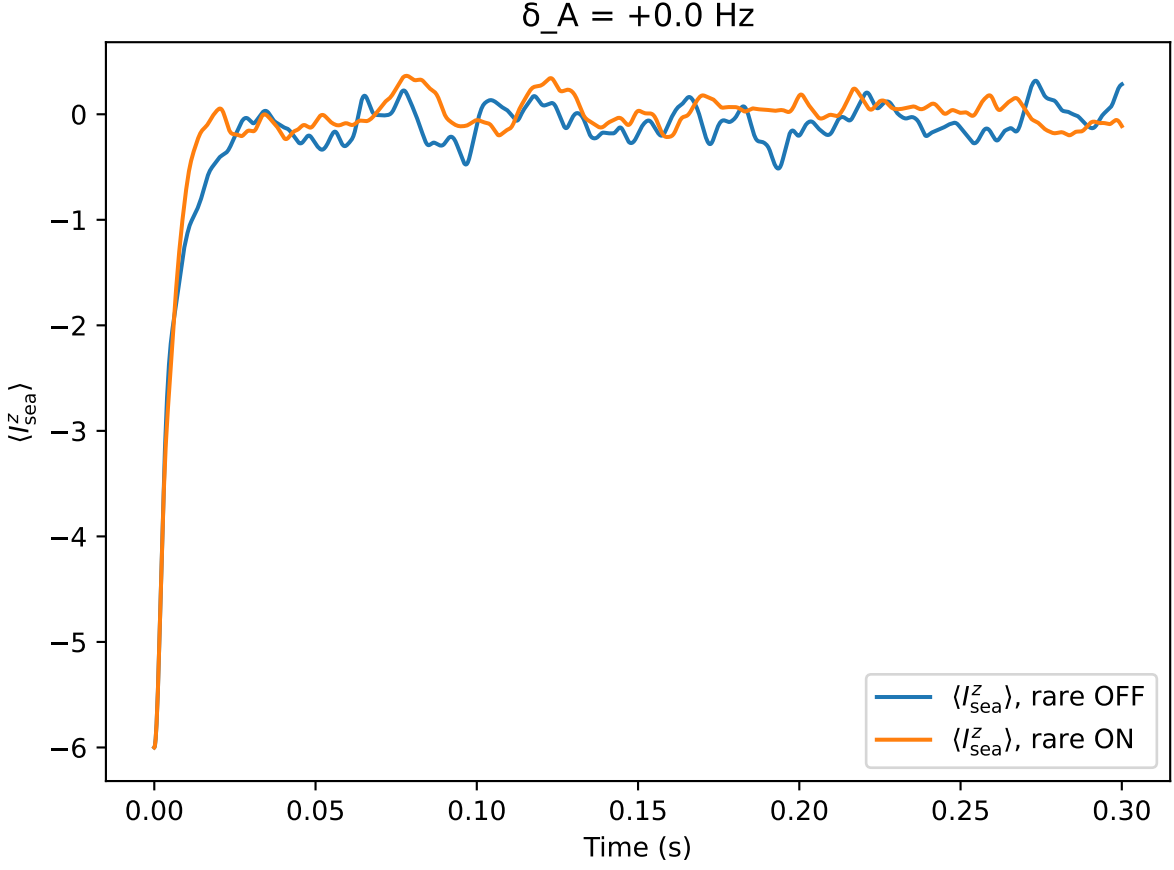
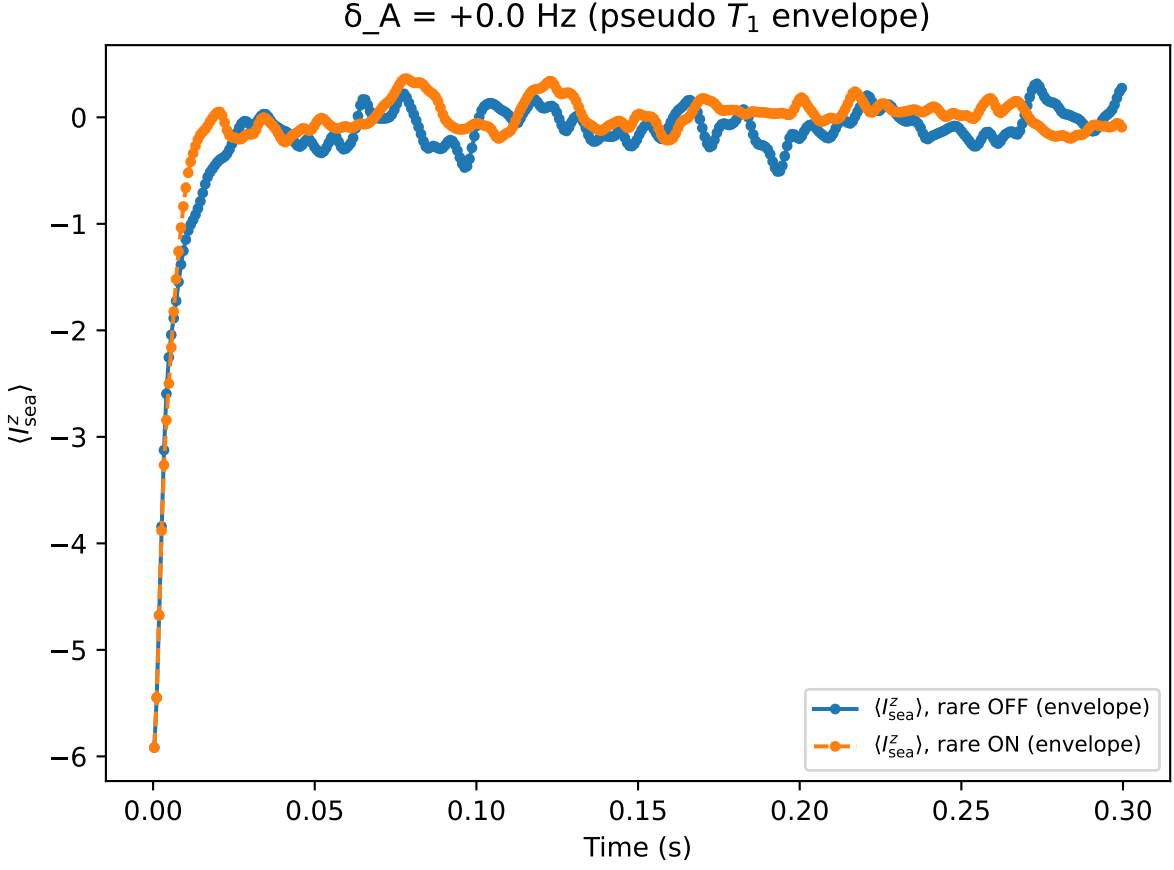
Sea detuning sweep report (Ga sea / Al rare)

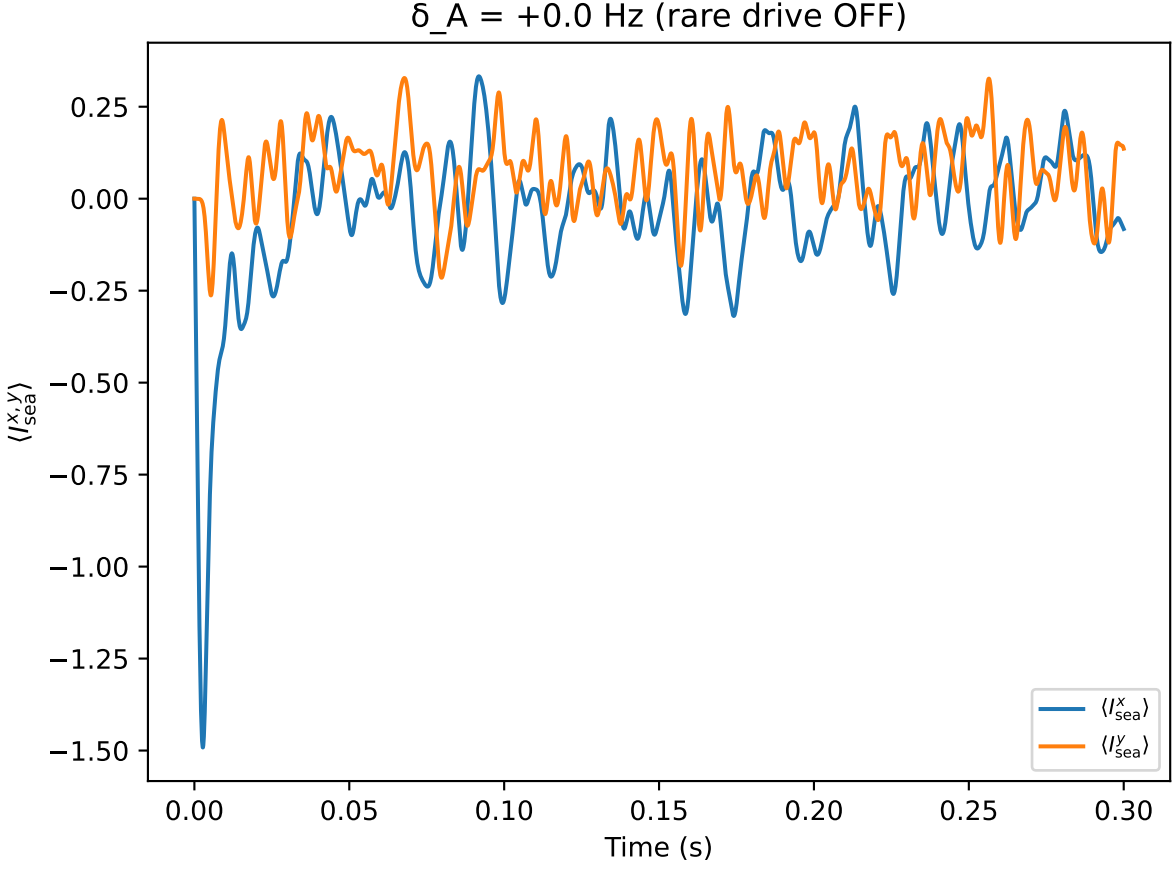
Global parameters (constant across sweep):

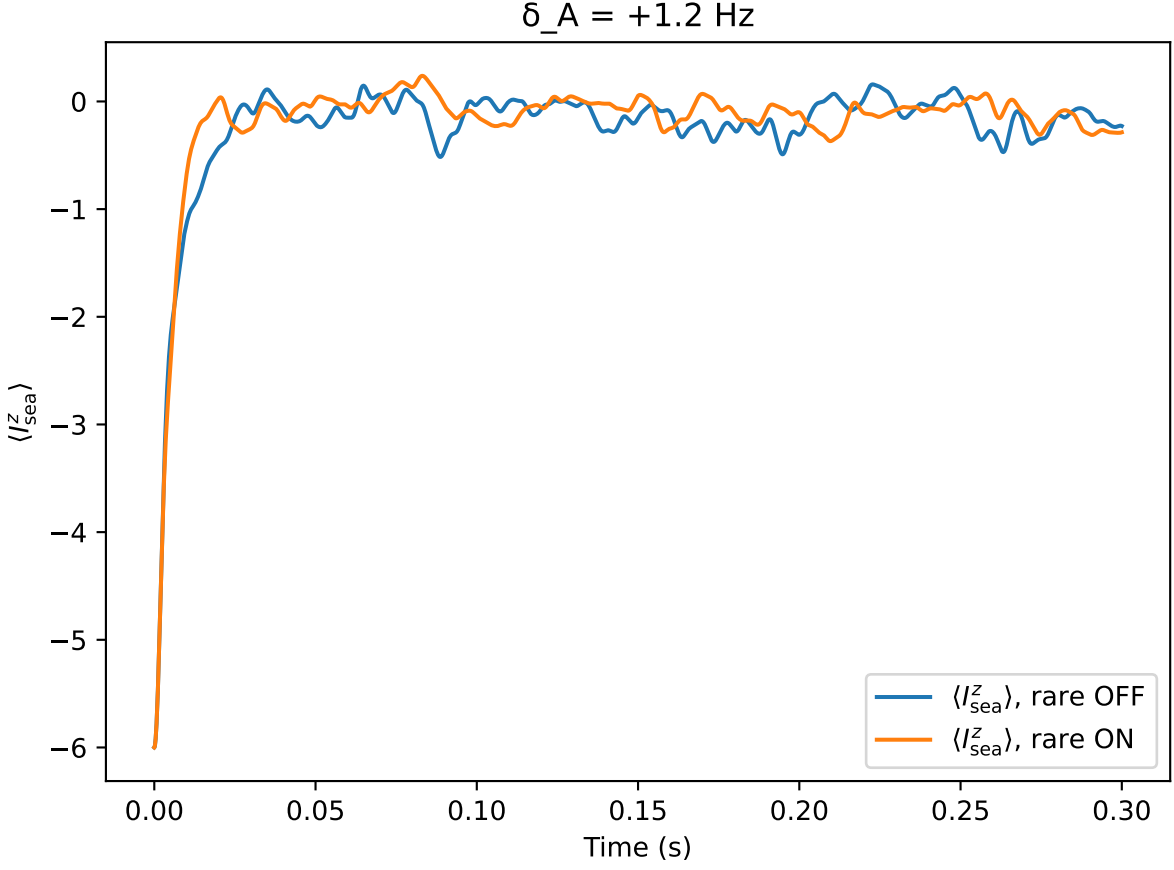
f_Az (sea Larmor)	= 39.062 MHz
f_Rz (rare Larmor)	= 33.308 MHz
f1A (sea Rabi)	= 0.020 kHz
f1R (rare Rabi)	= 2.000 kHz
gamma_sea	= 8.181e+07 rad·s⁻¹·T⁻¹
gamma_rare	= 6.976e+07 rad·s⁻¹·T⁻¹
B0_common	= 3.000 T
B1_sea	= 1.536e-06 T
B1_rare	= 1.801e-04 T
dipolar_scale_SI	= 1.055e-41
shell_scale	= 0.300 nm
t_final	= 3.000e-01 s
steps	= 20000
n_sea	= 12
phi_sea	= 1.571 rad
phi_rare	= 1.571 rad
sea_spin_type	= 1/2
rare_spin_type	= 1/2

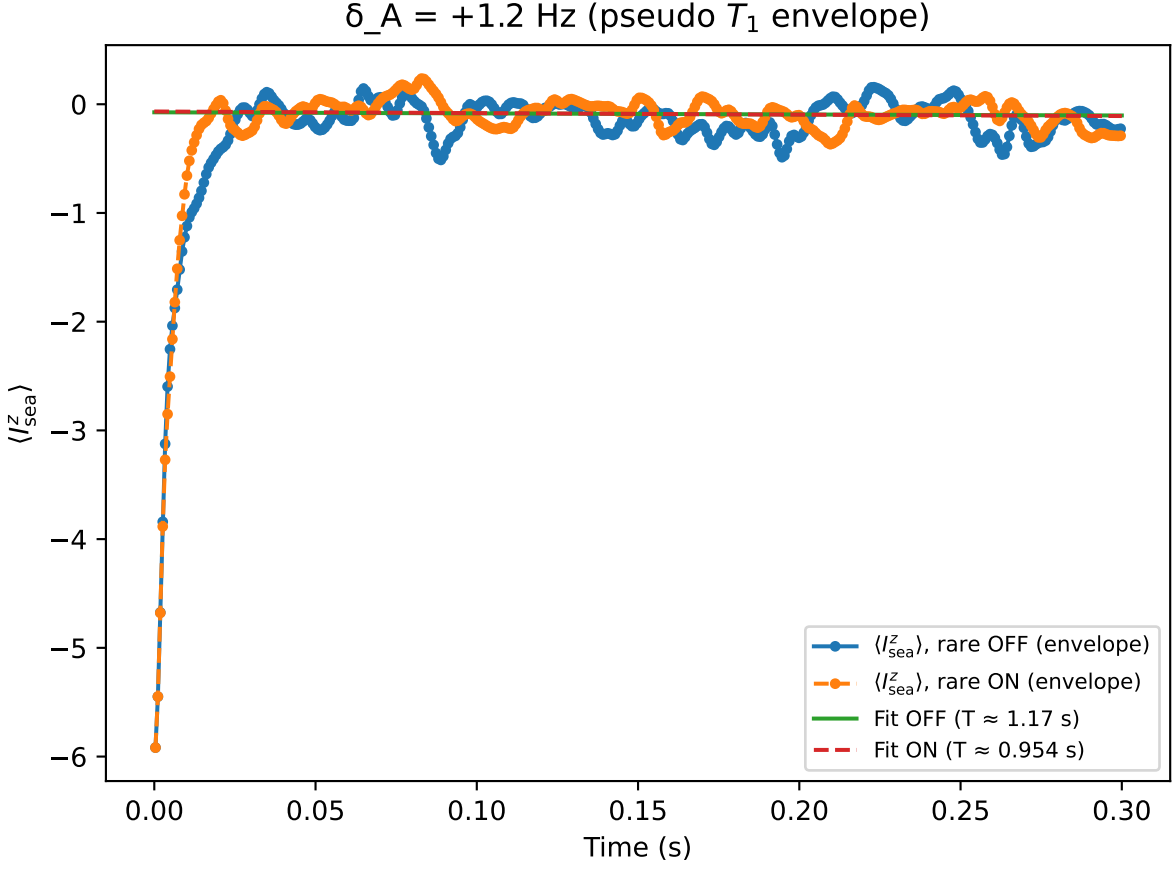
Sea detunings (δ_A = f_Az - f_rf,A) in Hz:
  +0.0, +1.2, +2.5, +3.8, +5.0, +6.2, +7.5, +8.8, +10.0

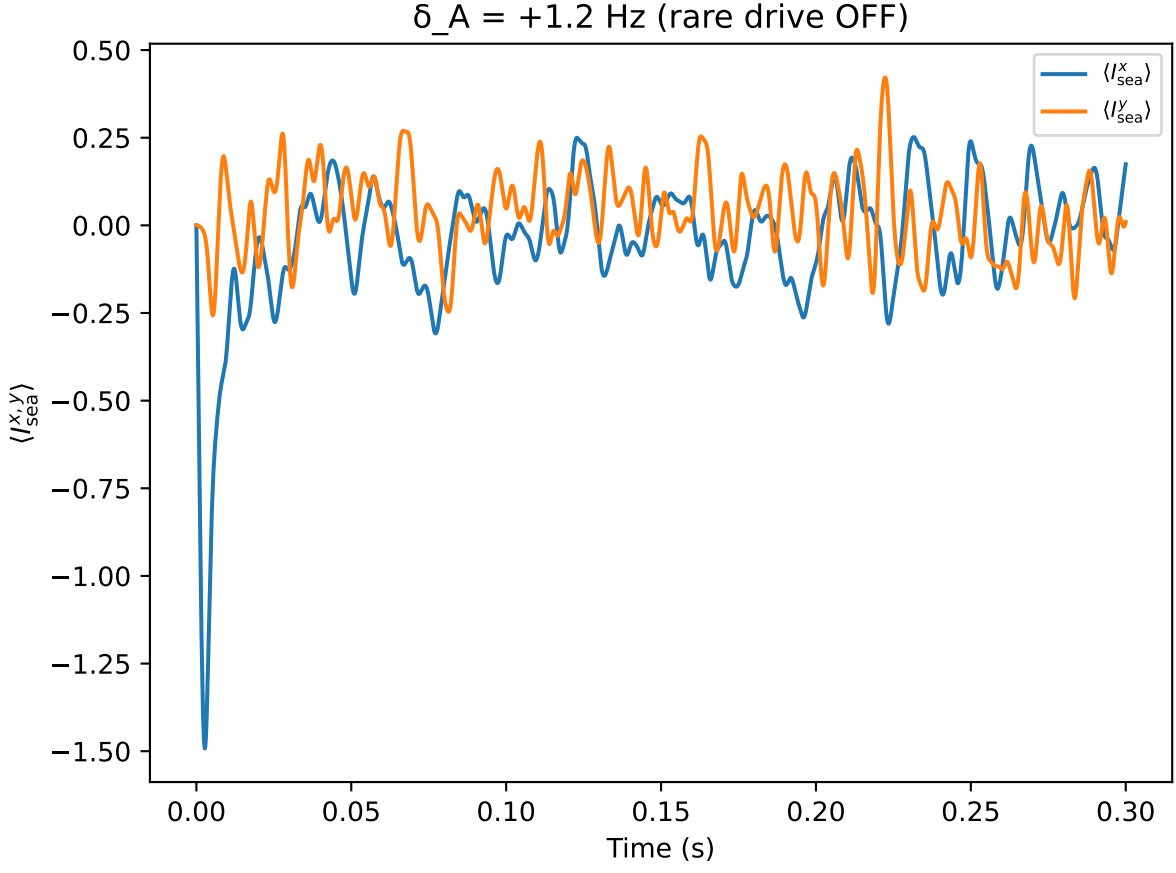

δ_A = +0.0 Hz
0
−1
−2
−3
−4
−5
−6
⟨I^z_sea⟩
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
⟨I^z_sea⟩, rare OFF
⟨I^z_sea⟩, rare ON

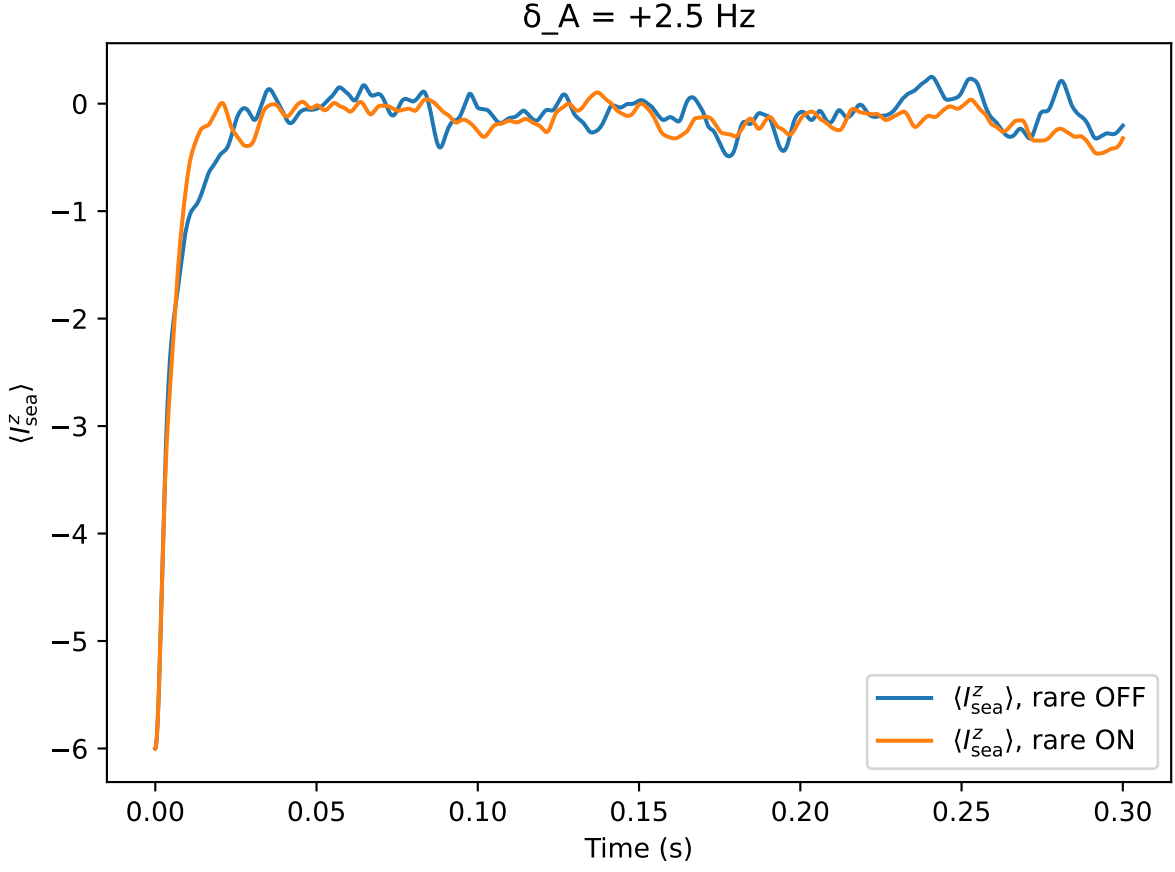

δ_A = +0.0 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
0
−1
−2
−3
−4
−5
−6
0.00
0.05
0.10
0.15
0.20
0.25
0.30
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)

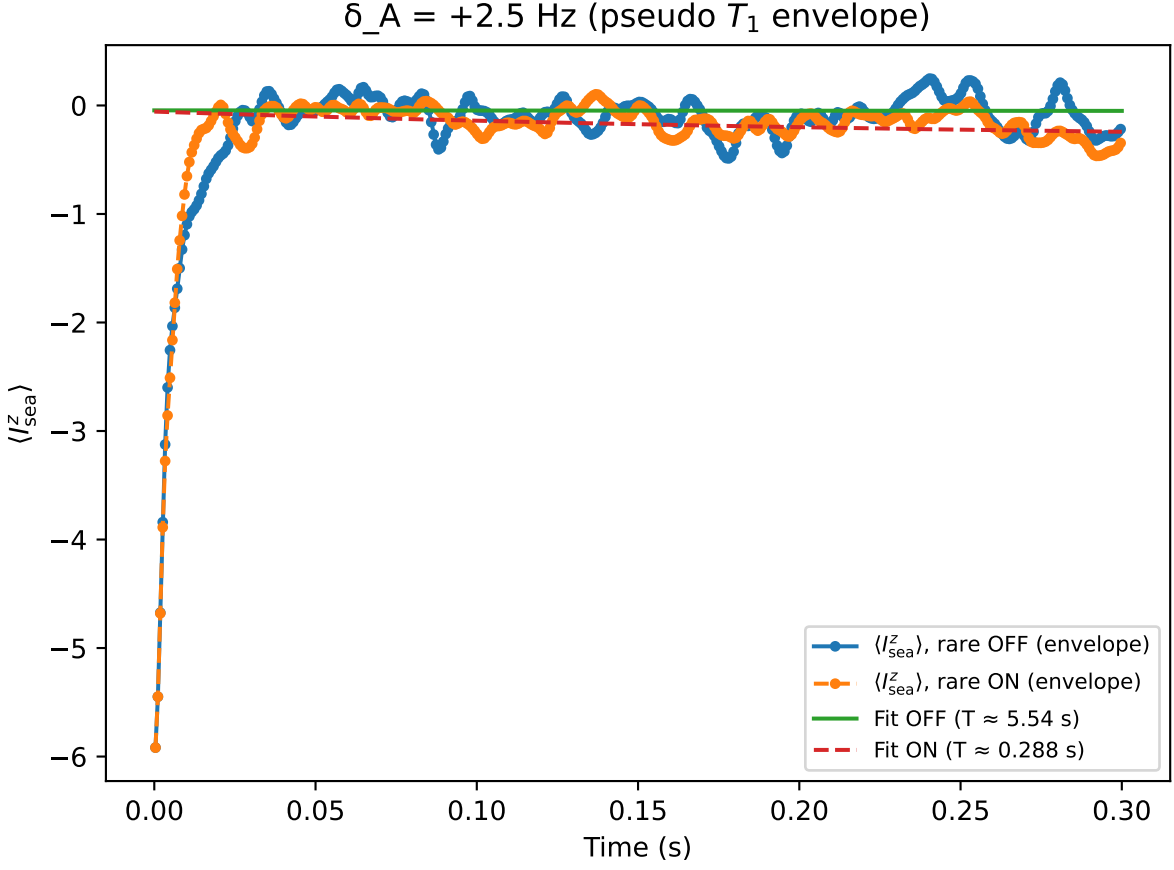

δ_A = +0.0 Hz (rare drive OFF)
0.25
0.00
−0.25
−0.50
−0.75
−1.00
−1.25
−1.50
$\langle I^{x,y}_{\mathrm{sea}} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^{x}_{\mathrm{sea}} \rangle$
$\langle I^{y}_{\mathrm{sea}} \rangle$

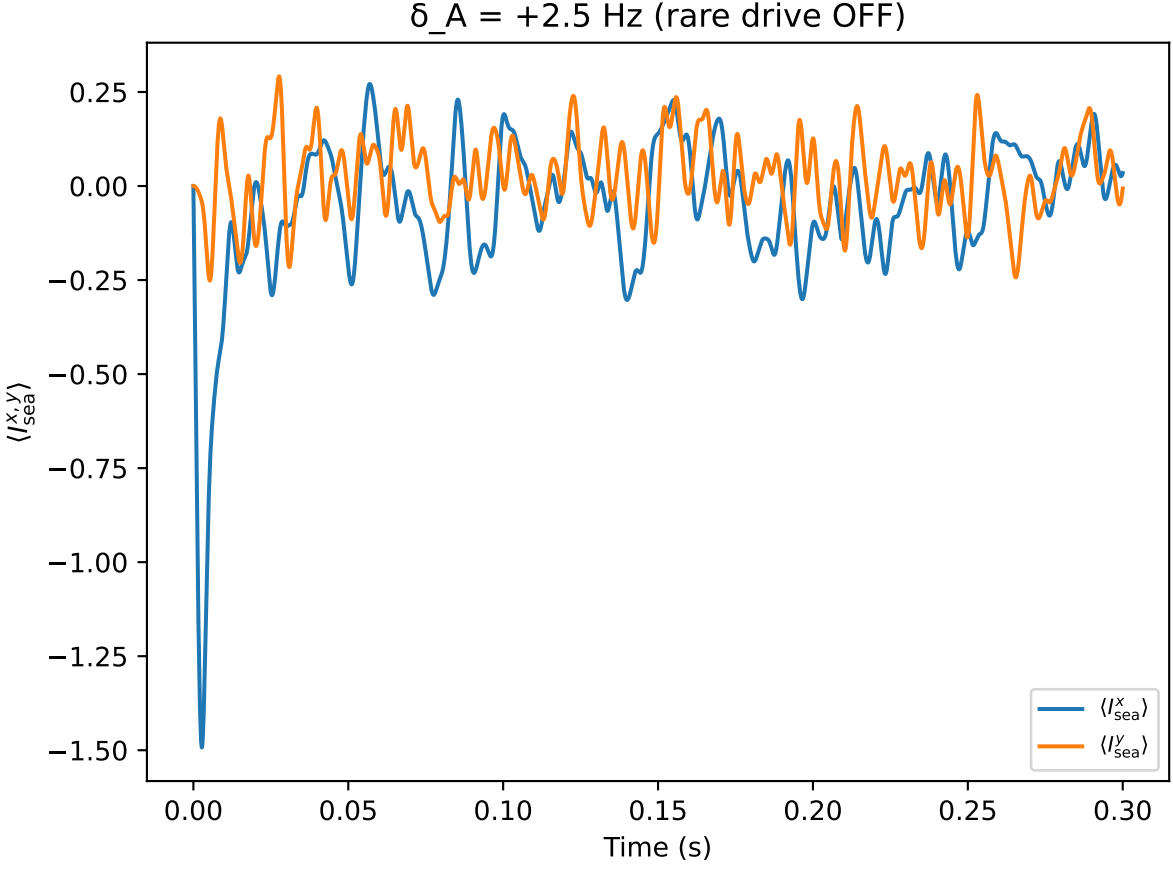

δ_A = +1.2 Hz
0
−1
−2
−3
−4
−5
−6
$\langle I^z_{sea} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF
$\langle I^z_{sea} \rangle$, rare ON

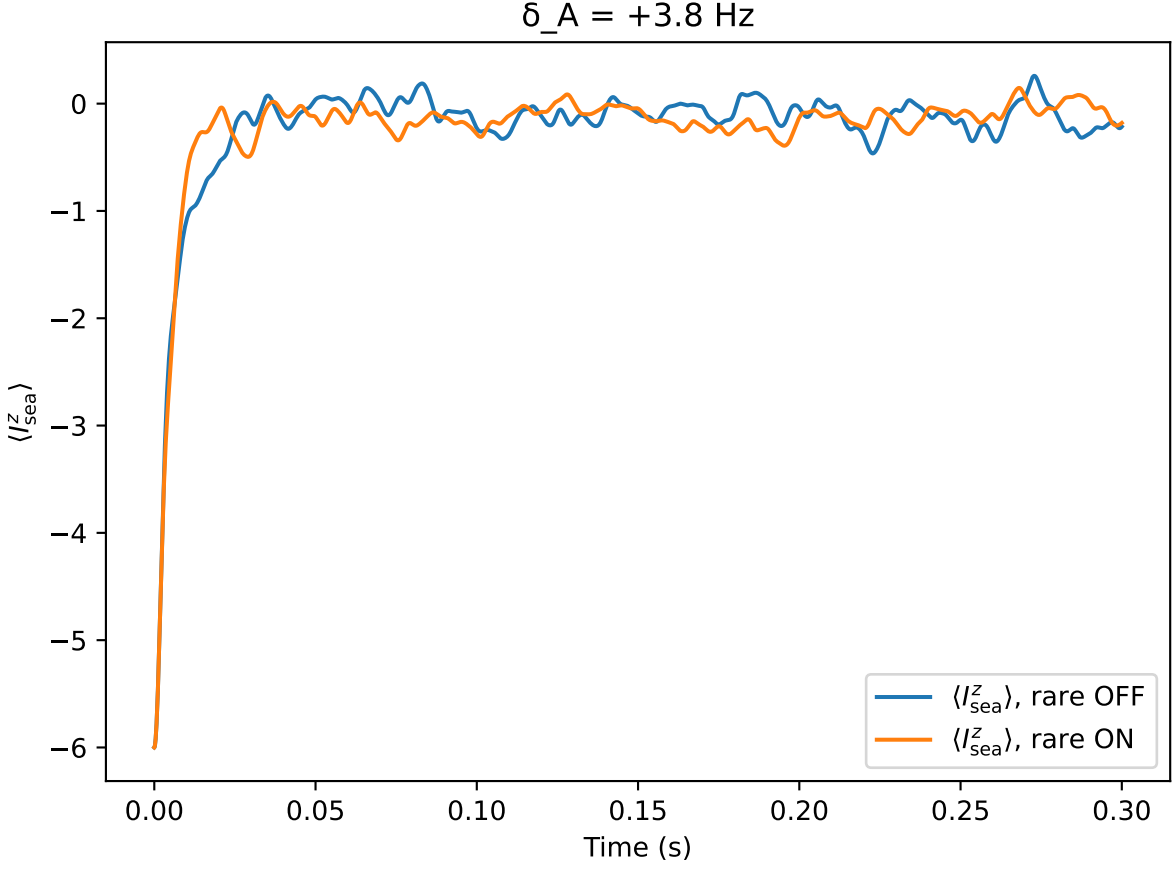

δ_A = +1.2 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
0
−1
−2
−3
−4
−5
−6
0.00
0.05
0.10
0.15
0.20
0.25
0.30
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 1.17 s)
Fit ON (T ≈ 0.954 s)

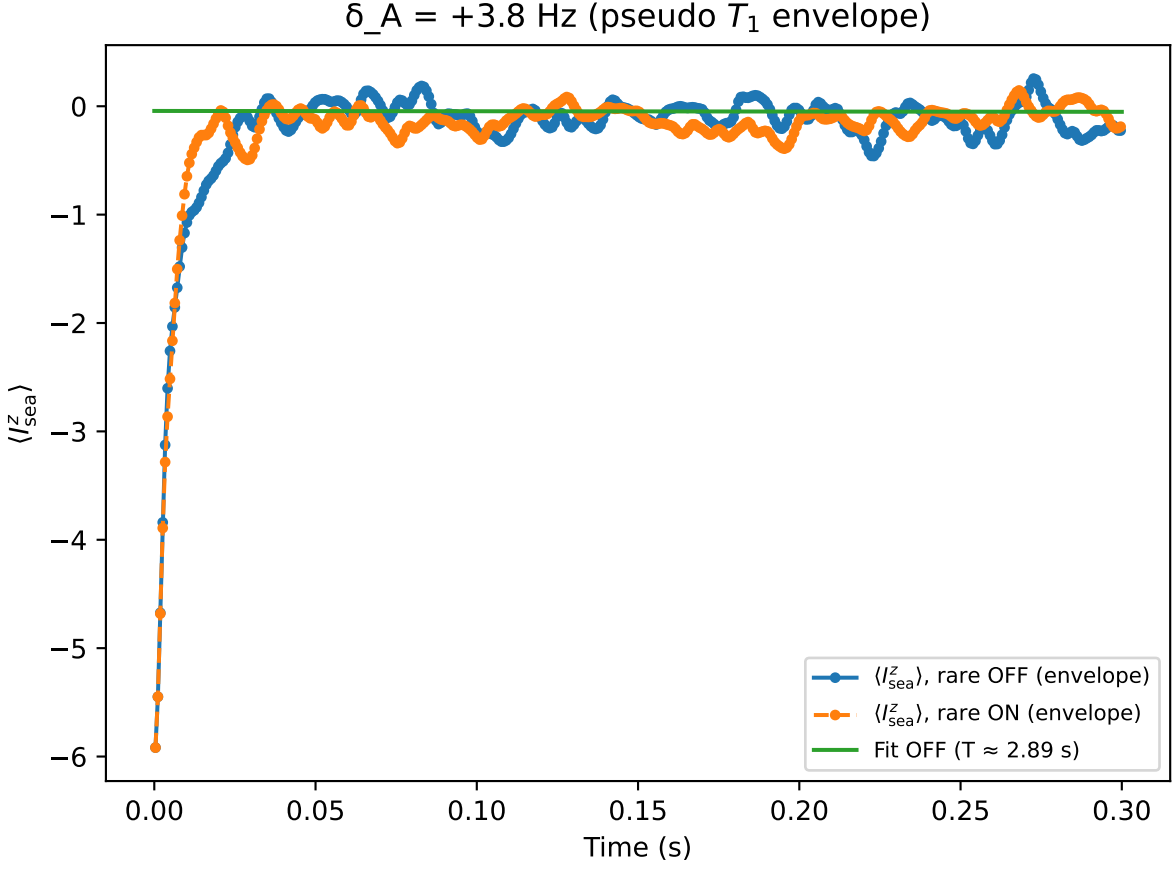

δ_A = +1.2 Hz (rare drive OFF)
$\langle I^{x}_{sea} \rangle$
$\langle I^{y}_{sea} \rangle$
$\langle I^{x,y}_{sea} \rangle$
0.50
0.25
0.00
−0.25
−0.50
−0.75
−1.00
−1.25
−1.50
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)

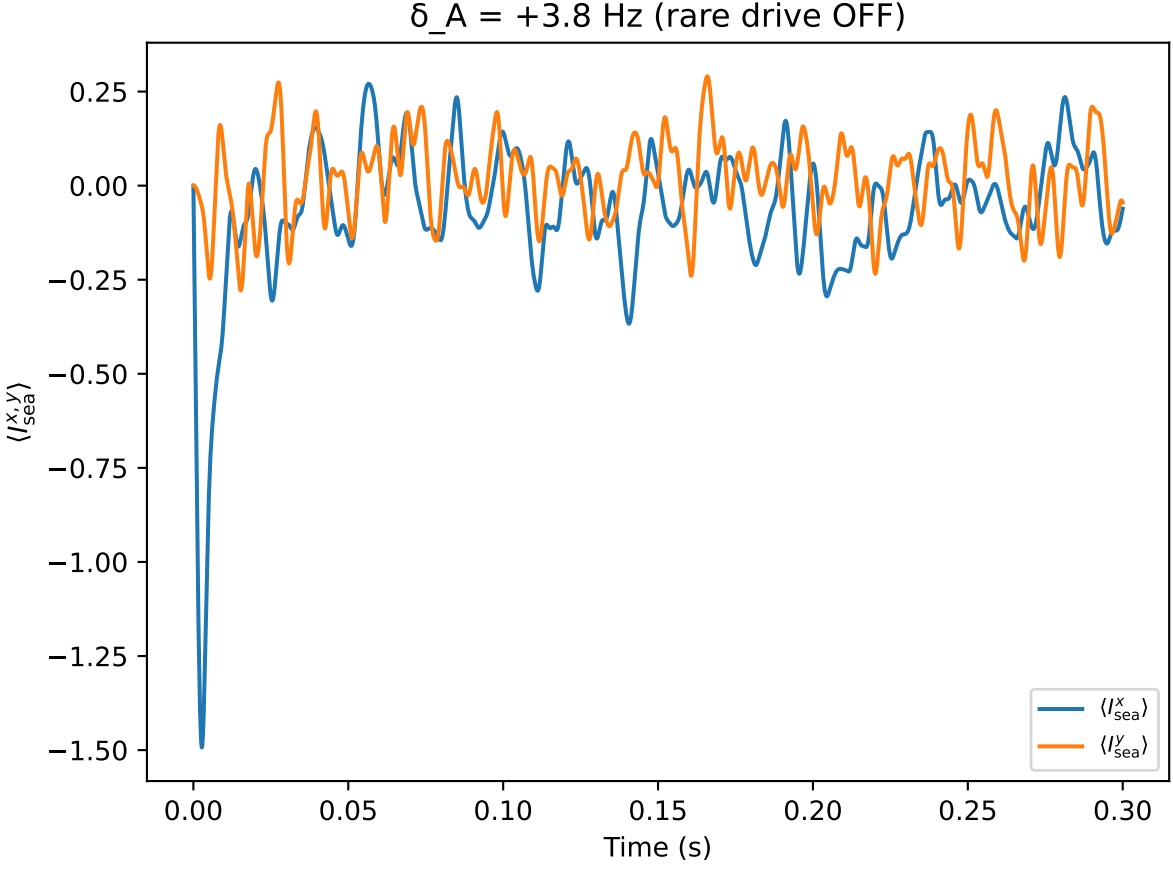

δ_A = +2.5 Hz
0
−1
−2
−3
−4
−5
−6
$\langle I^z_{sea} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF
$\langle I^z_{sea} \rangle$, rare ON

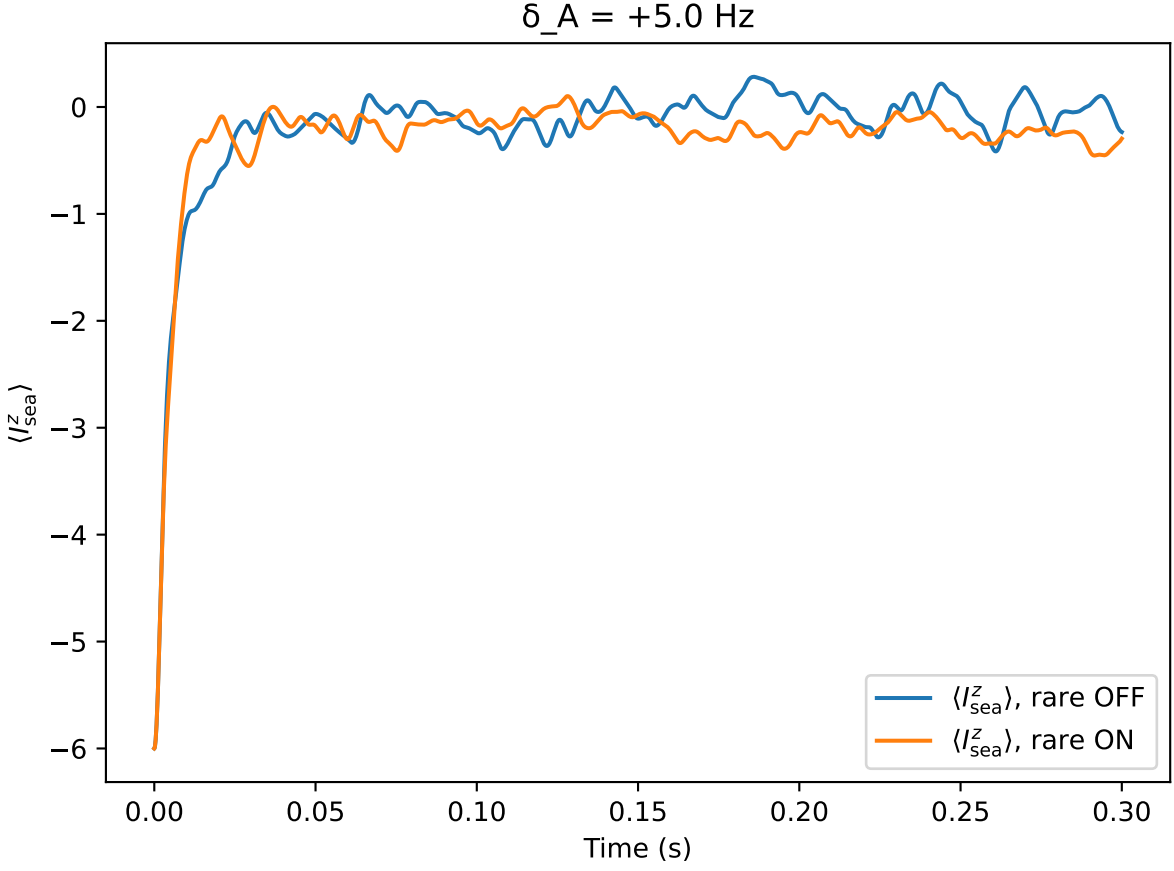

δ_A = +2.5 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
0
−1
−2
−3
−4
−5
−6
0.00
0.05
0.10
0.15
0.20
0.25
0.30
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 5.54 s)
Fit ON (T ≈ 0.288 s)

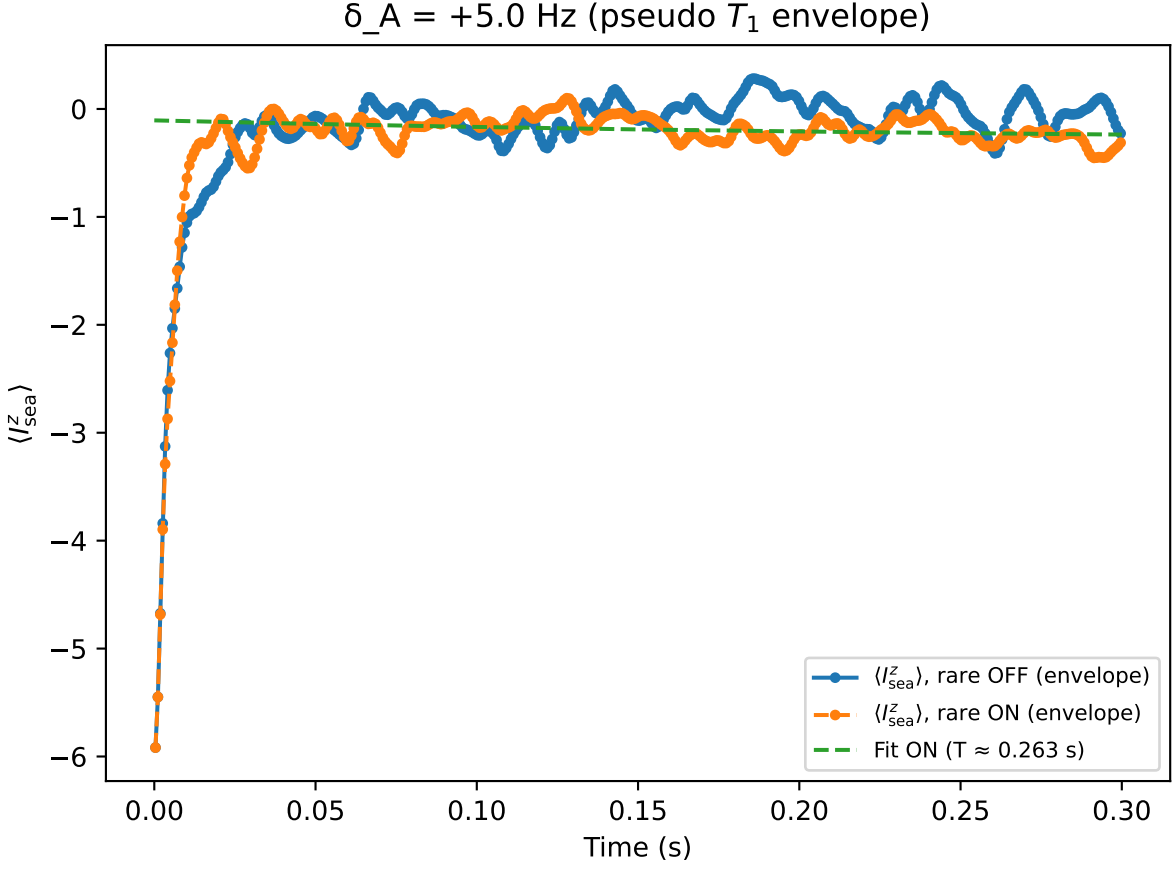

δ_A = +2.5 Hz (rare drive OFF)
0.25
0.00
−0.25
−0.50
−0.75
−1.00
−1.25
−1.50
$\langle I^{x,y}_{\mathrm{sea}} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^{x}_{\mathrm{sea}} \rangle$
$\langle I^{y}_{\mathrm{sea}} \rangle$

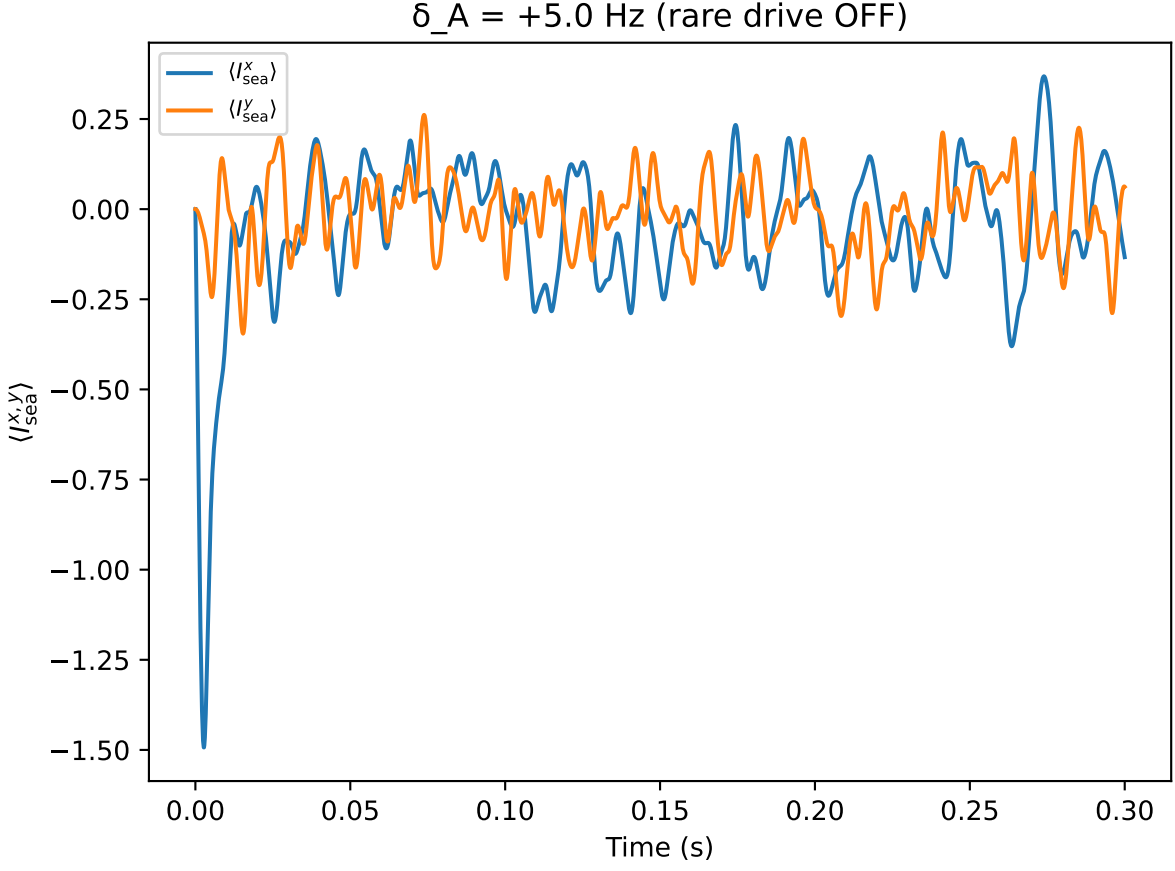

δ_A = +3.8 Hz
0
−1
−2
−3
−4
−5
−6
$\langle I^z_{sea} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF
$\langle I^z_{sea} \rangle$, rare ON

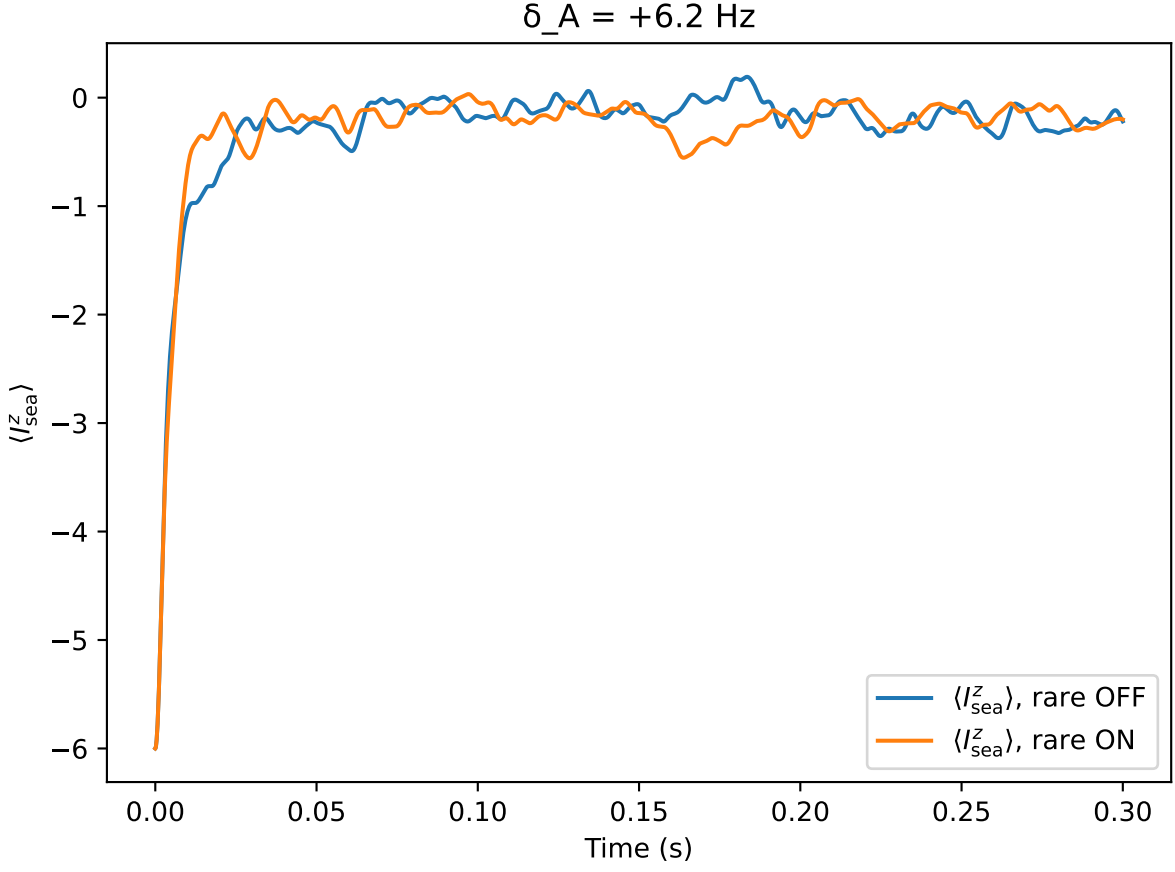

δ_A = +3.8 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
0
−1
−2
−3
−4
−5
−6
0.00
0.05
0.10
0.15
0.20
0.25
0.30
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 2.89 s)

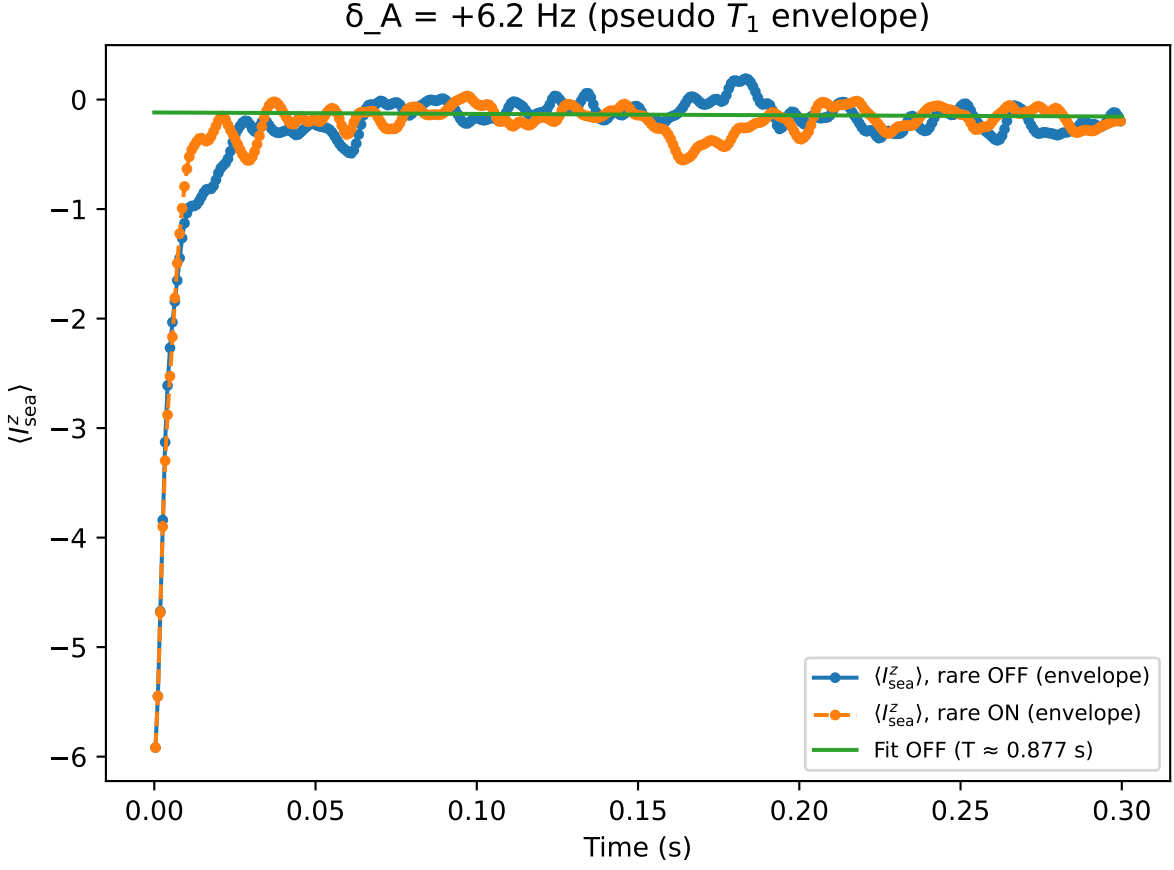

δ_A = +3.8 Hz (rare drive OFF)
0.25
0.00
−0.25
−0.50
−0.75
−1.00
−1.25
−1.50
$\langle I^{x,y}_{\mathrm{sea}} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^{x}_{\mathrm{sea}} \rangle$
$\langle I^{y}_{\mathrm{sea}} \rangle$

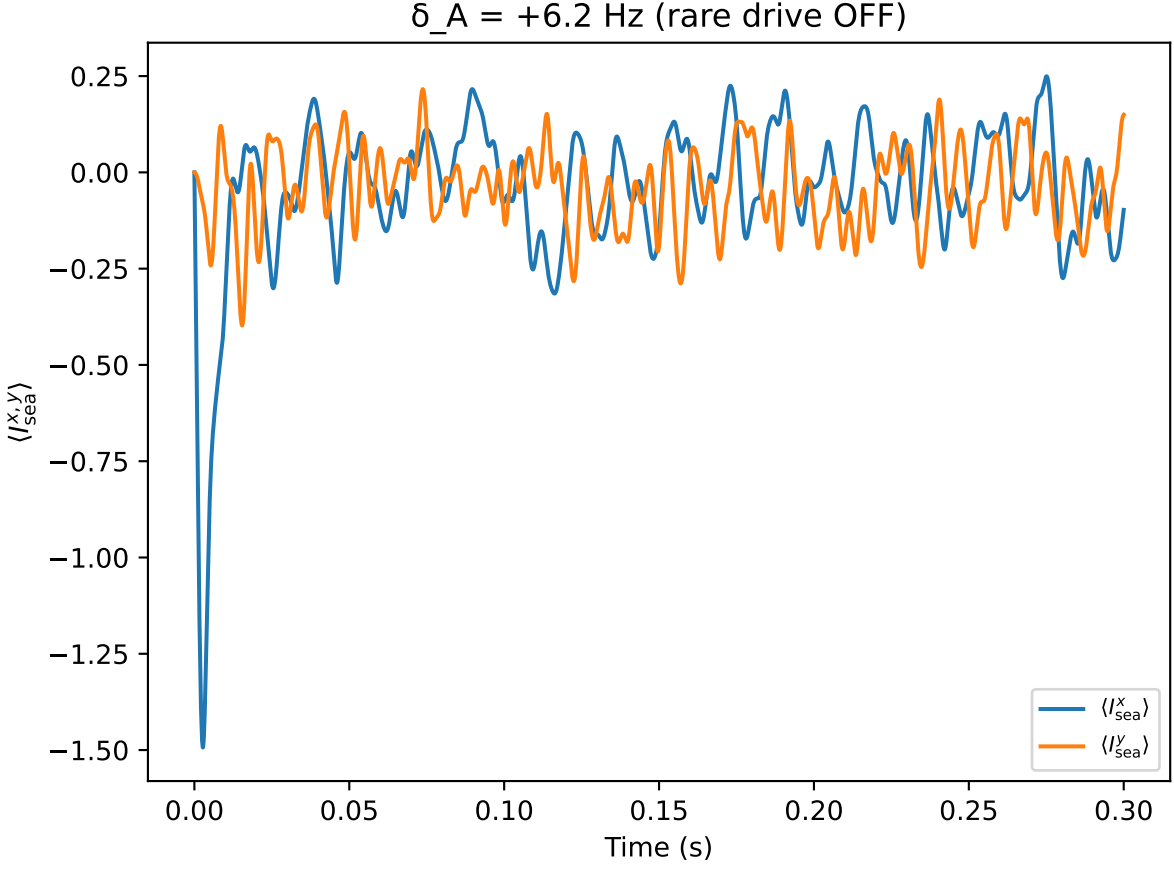

δ_A = +5.0 Hz
0
−1
−2
−3
−4
−5
−6
$\langle I^z_{sea} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF
$\langle I^z_{sea} \rangle$, rare ON

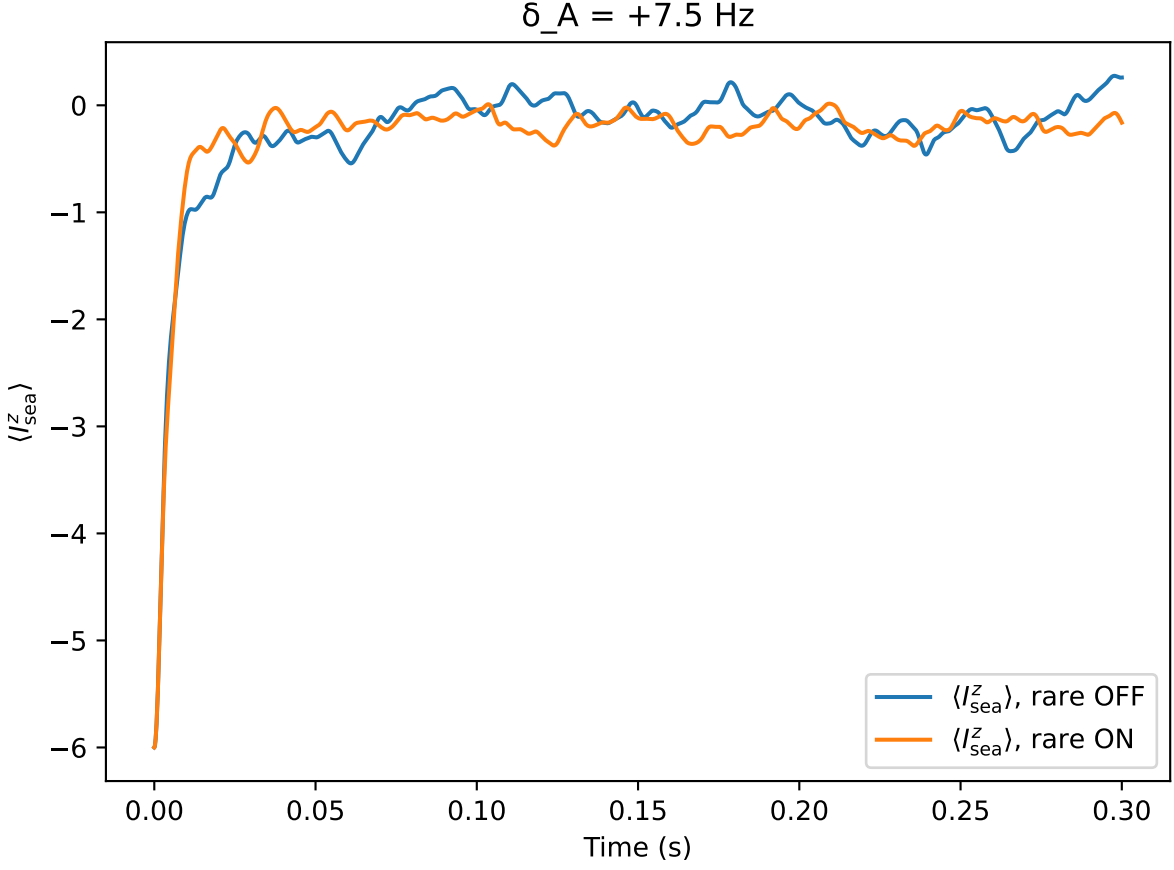

δ_A = +5.0 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
0
−1
−2
−3
−4
−5
−6
0.00
0.05
0.10
0.15
0.20
0.25
0.30
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit ON (T ≈ 0.263 s)

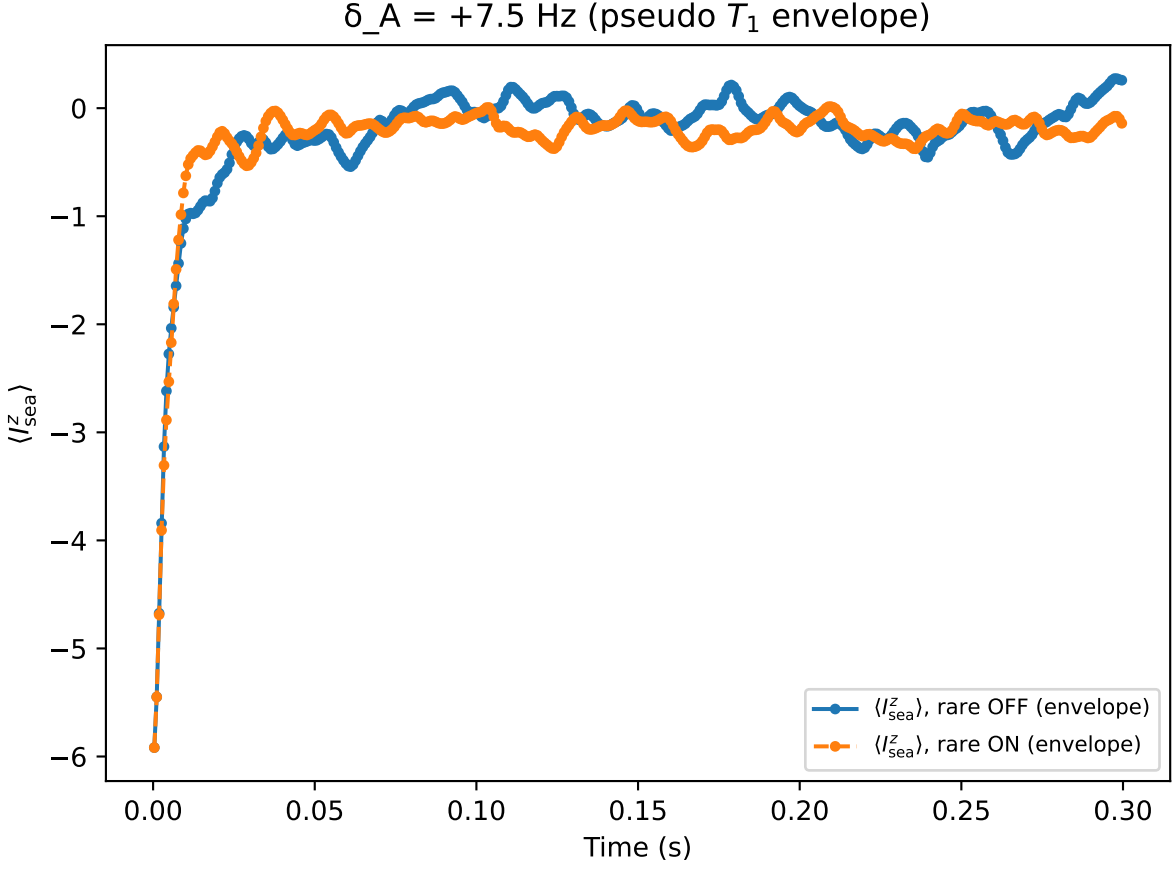

δ_A = +5.0 Hz (rare drive OFF)
⟨I^x_sea⟩
⟨I^y_sea⟩
0.25
0.00
−0.25
−0.50
−0.75
−1.00
−1.25
−1.50
⟨I^{x,y}_sea⟩
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)

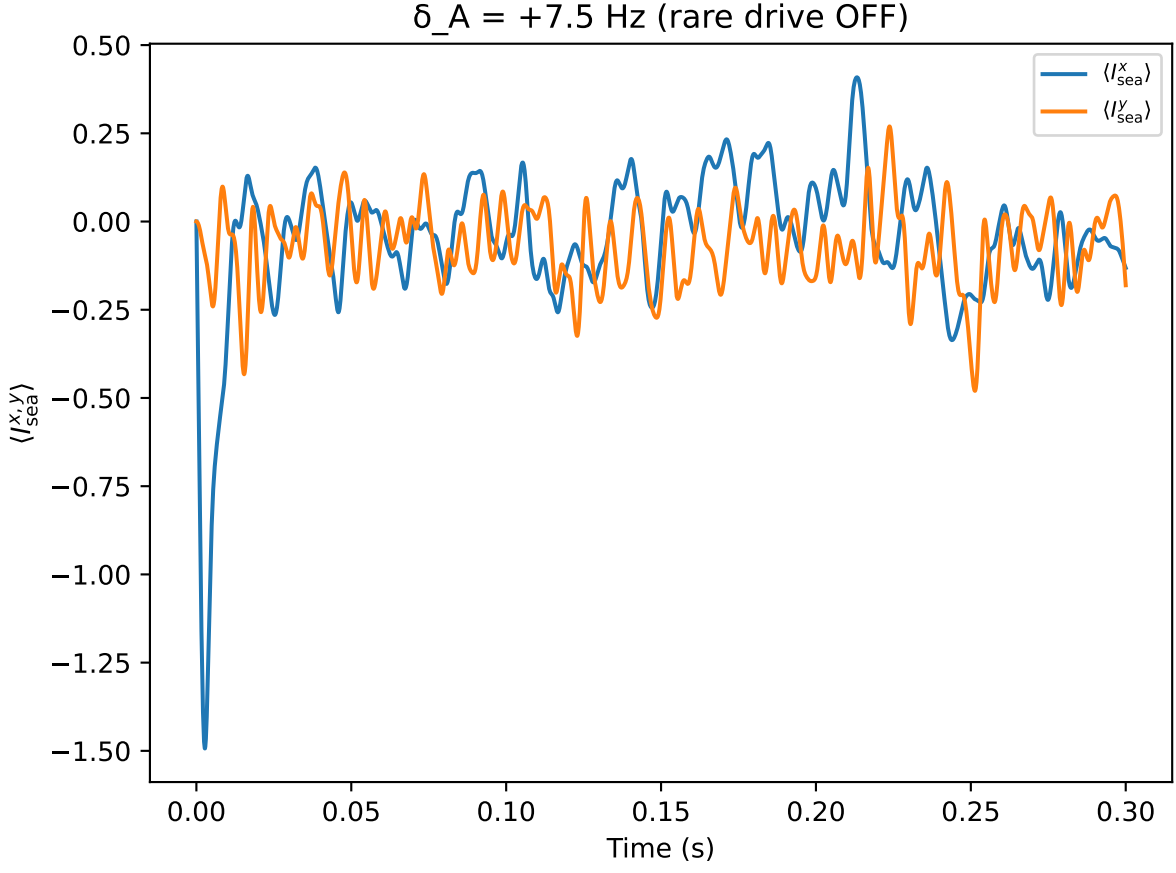

δ_A = +6.2 Hz
0
−1
−2
−3
−4
−5
−6
$\langle I^z_{sea} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF
$\langle I^z_{sea} \rangle$, rare ON

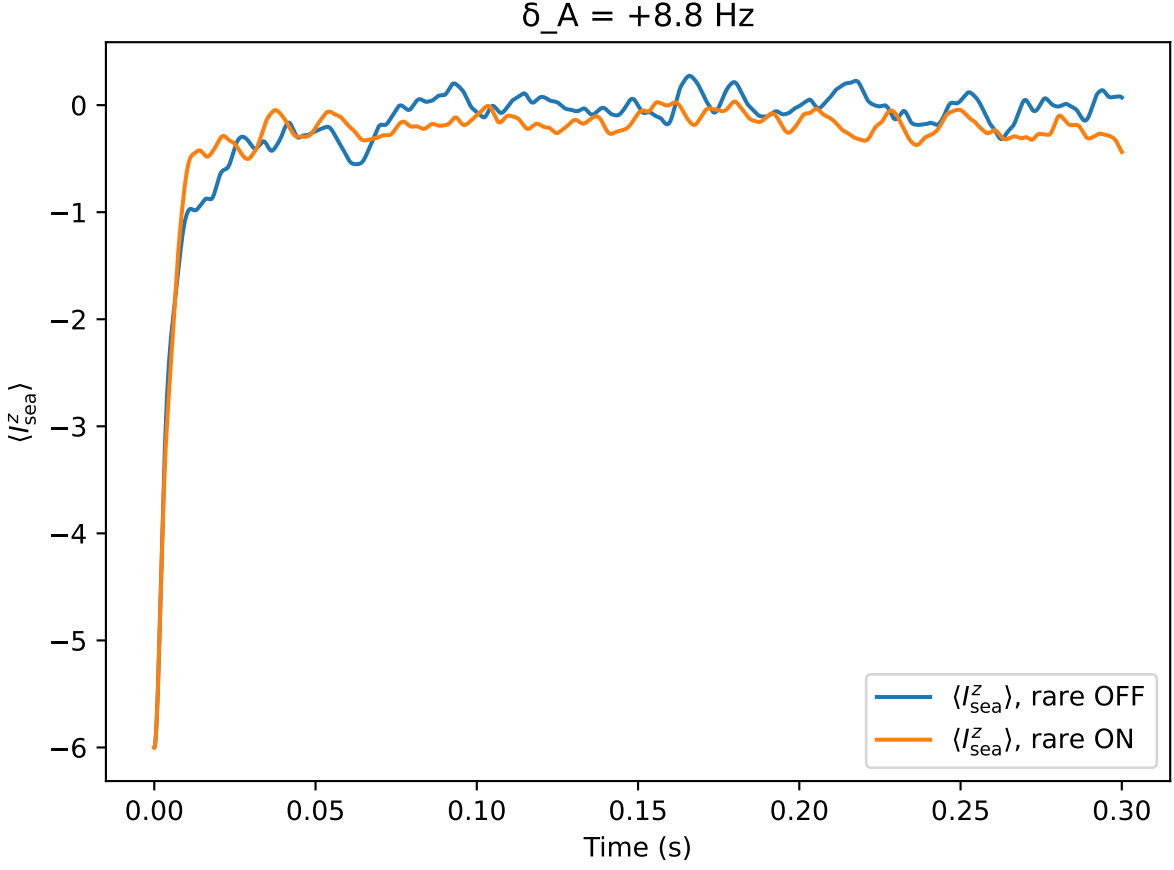

δ_A = +6.2 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
0
−1
−2
−3
−4
−5
−6
0.00
0.05
0.10
0.15
0.20
0.25
0.30
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 0.877 s)

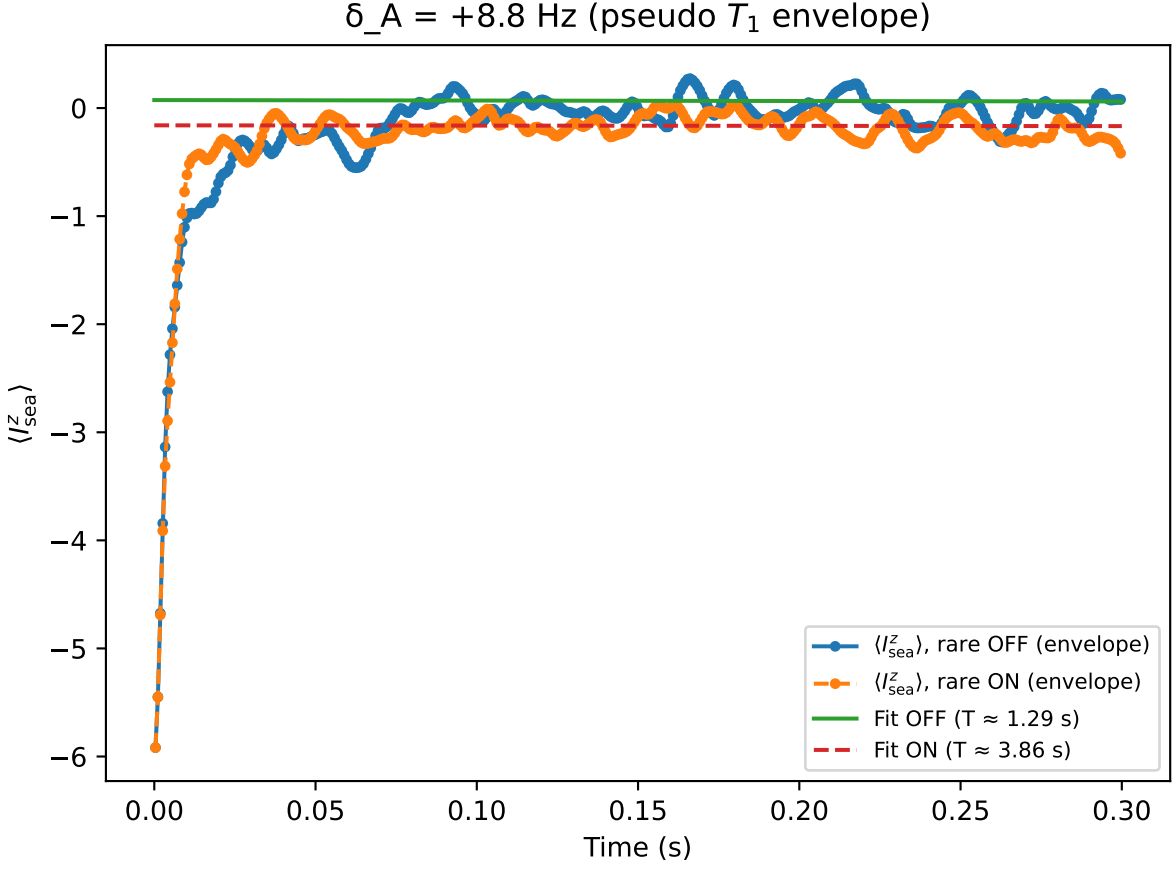

δ_A = +6.2 Hz (rare drive OFF)
0.25
0.00
−0.25
−0.50
−0.75
−1.00
−1.25
−1.50
$\langle I^{x,y}_{\mathrm{sea}} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^{x}_{\mathrm{sea}} \rangle$
$\langle I^{y}_{\mathrm{sea}} \rangle$

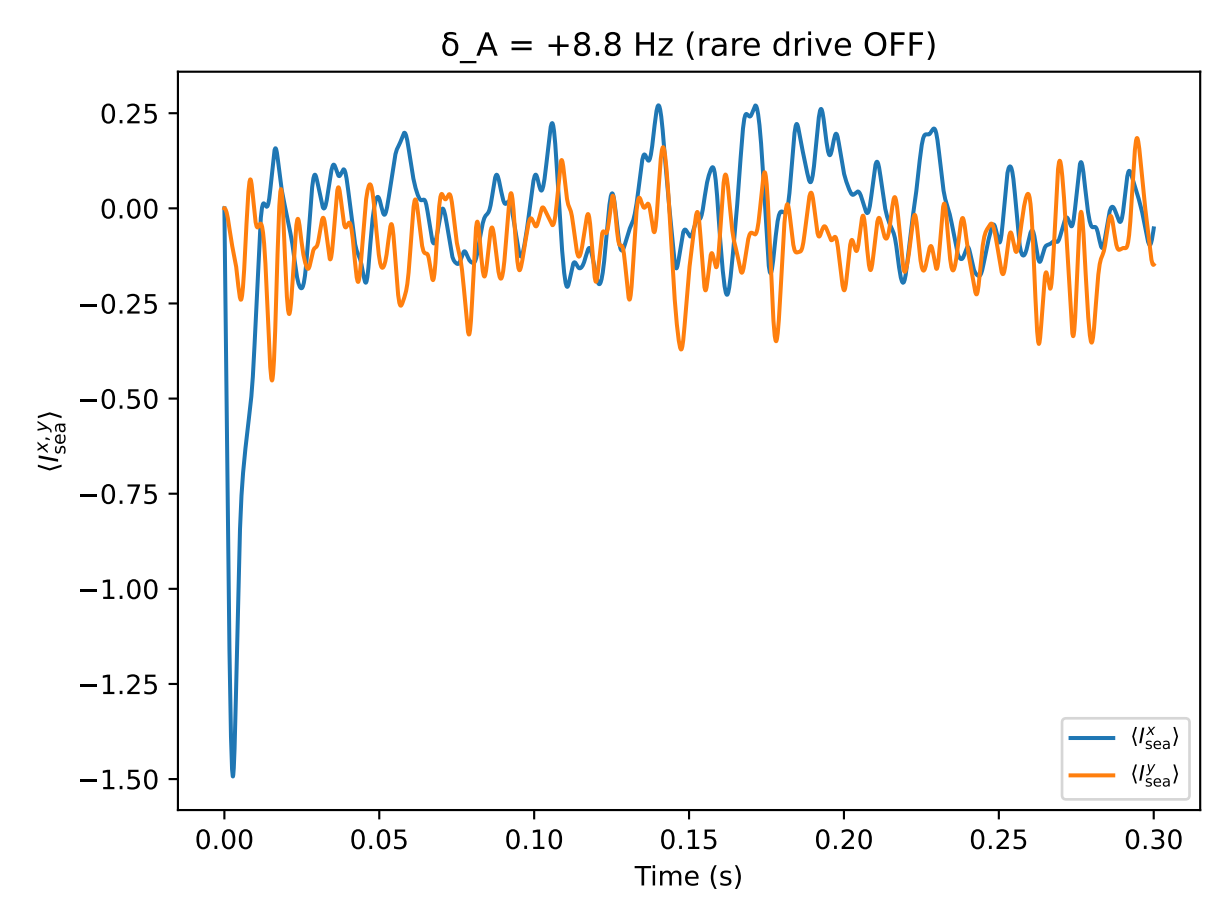

δ_A = +7.5 Hz
0
−1
−2
−3
−4
−5
−6
$\langle I^z_{sea} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF
$\langle I^z_{sea} \rangle$, rare ON

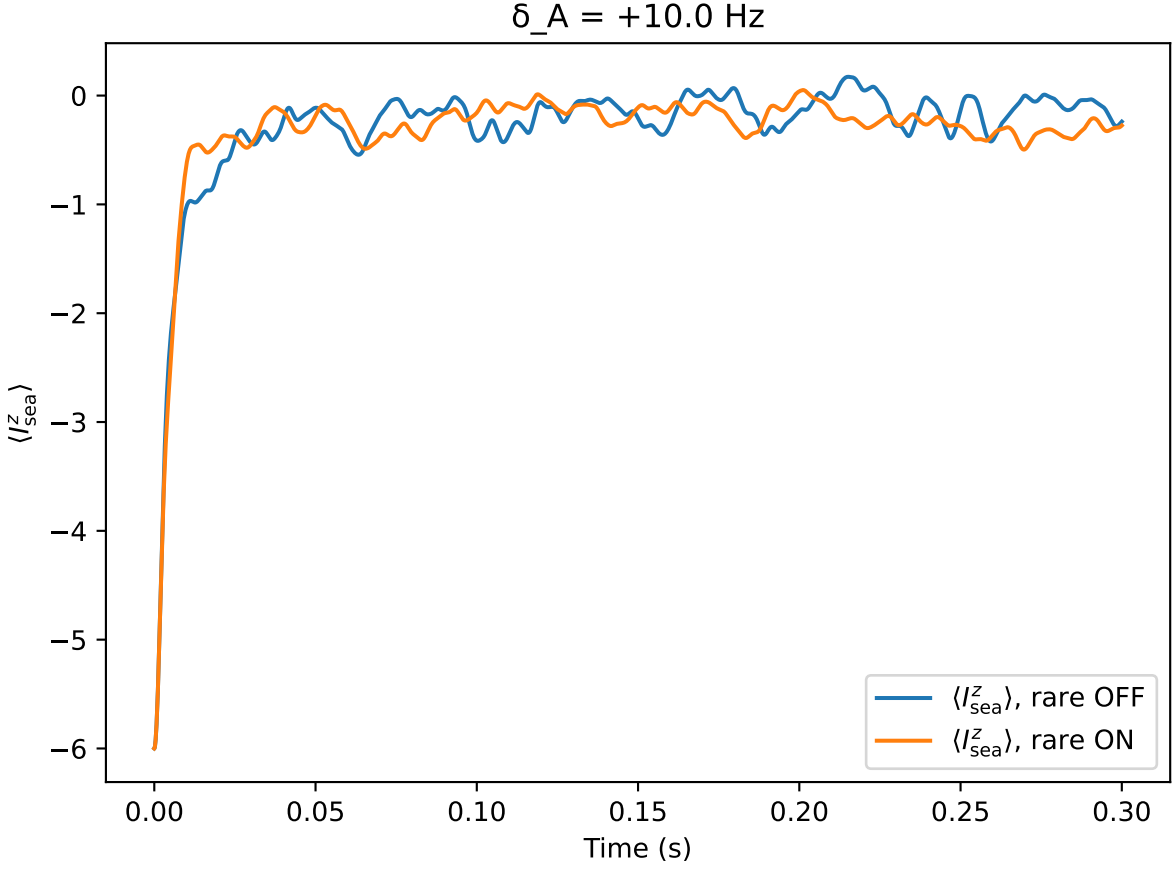

δ_A = +7.5 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
0
−1
−2
−3
−4
−5
−6
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)

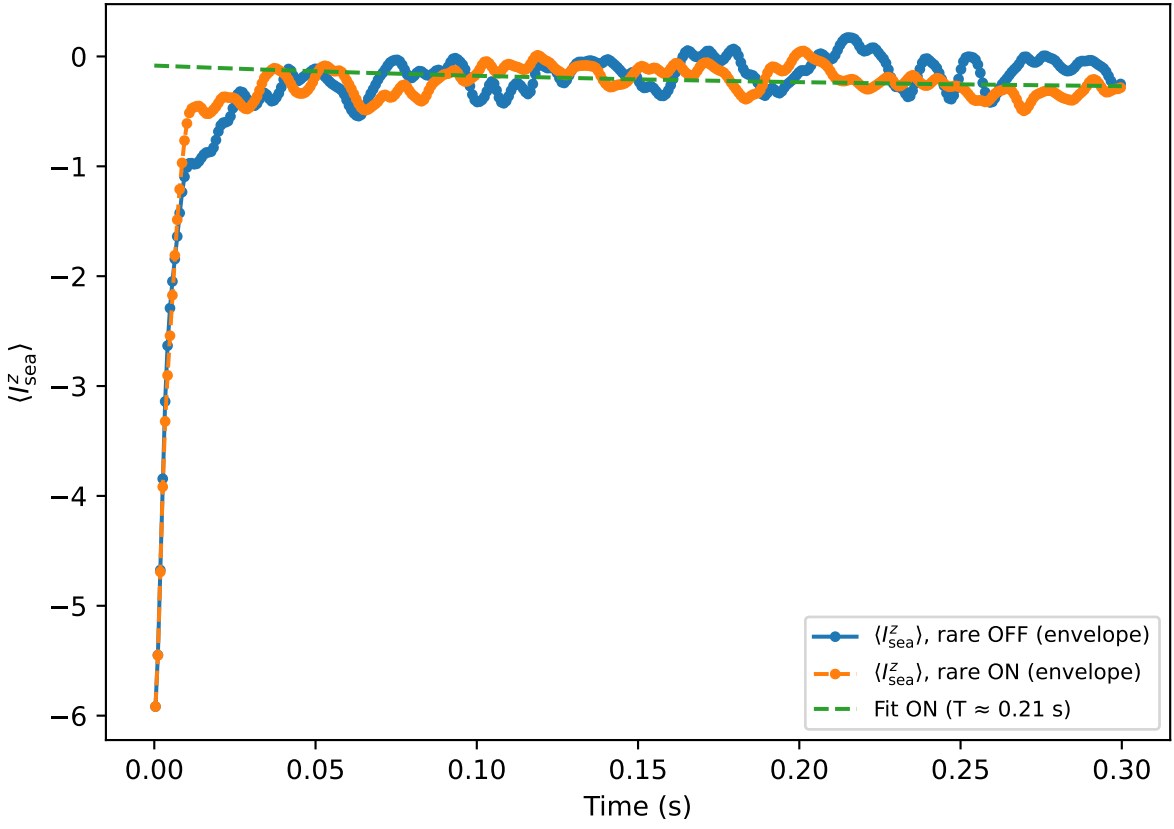

δ_A = +7.5 Hz (rare drive OFF)
0.50
0.25
0.00
−0.25
−0.50
−0.75
−1.00
−1.25
−1.50
$\langle I^{x,y}_{\mathrm{sea}} \rangle$
$\langle I^{x}_{\mathrm{sea}} \rangle$
$\langle I^{y}_{\mathrm{sea}} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)

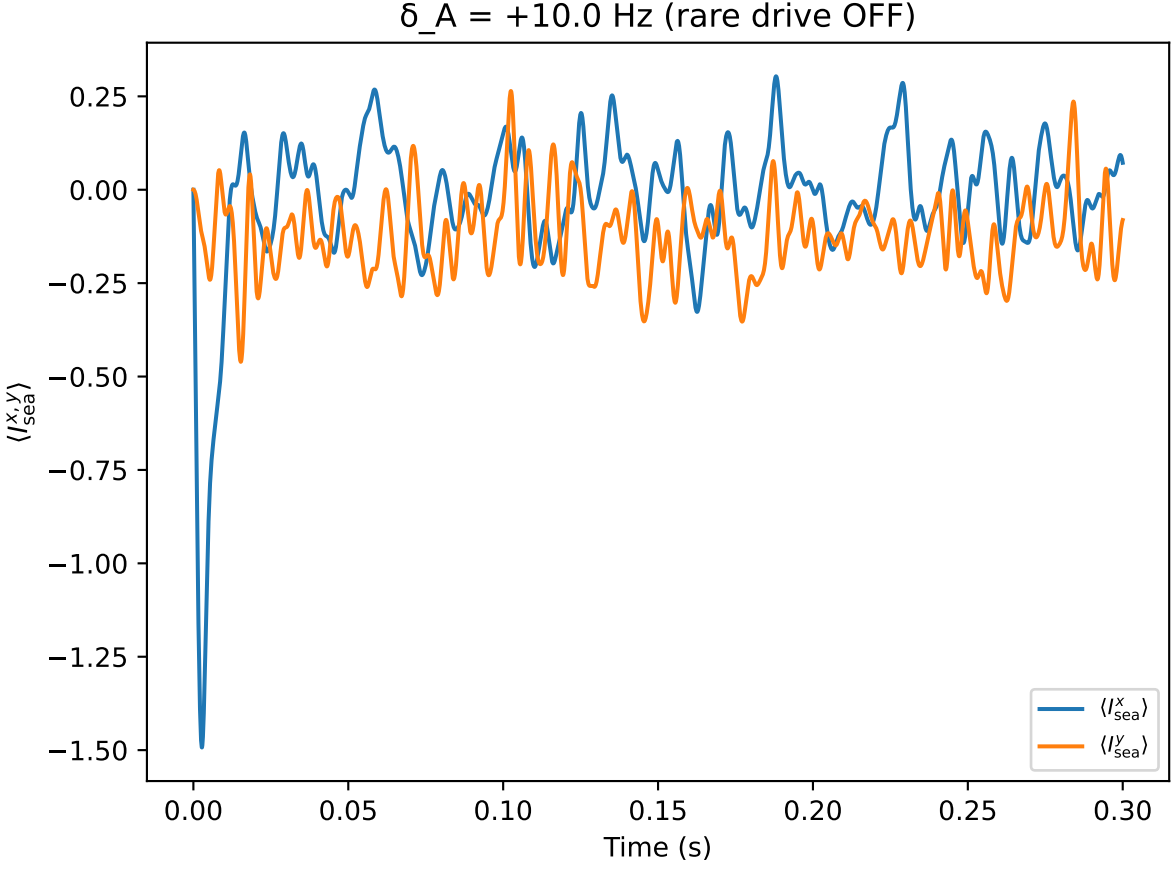

δ_A = +8.8 Hz
0
−1
−2
−3
−4
−5
−6
$\langle I^z_{sea} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF
$\langle I^z_{sea} \rangle$, rare ON


δ_A = +8.8 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
0
−1
−2
−3
−4
−5
−6
0.00
0.05
0.10
0.15
0.20
0.25
0.30
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 1.29 s)
Fit ON (T ≈ 3.86 s)


δ_A = +8.8 Hz (rare drive OFF)
0.25
0.00
−0.25
−0.50
−0.75
−1.00
−1.25
−1.50
$\langle I^{x,y}_{\mathrm{sea}} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^{x}_{\mathrm{sea}} \rangle$
$\langle I^{y}_{\mathrm{sea}} \rangle$


δ_A = +10.0 Hz
0
−1
−2
−3
−4
−5
−6
⟨I^z_sea⟩
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
⟨I^z_sea⟩, rare OFF
⟨I^z_sea⟩, rare ON


δ_A = +10.0 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
0
−1
−2
−3
−4
−5
−6
0.00
0.05
0.10
0.15
0.20
0.25
0.30
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit ON (T ≈ 0.21 s)


δ_A = +10.0 Hz (rare drive OFF)
0.25
0.00
−0.25
−0.50
−0.75
−1.00
−1.25
−1.50
$\langle I^{x,y}_{\mathrm{sea}} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^{x}_{\mathrm{sea}} \rangle$
$\langle I^{y}_{\mathrm{sea}} \rangle$

T-like decay fits from ⟨I^z_sea⟩ traces

delta_Hz	T_Iz_sea_off	T_Iz_sea_on
+0.0	NA	NA
+1.2	1.17	0.954
+2.5	5.54	0.288
+3.8	2.89	NA
+5.0	NA	0.263
+6.2	0.877	NA
+7.5	NA	NA
+8.8	1.29	3.86
+10.0	NA	0.21