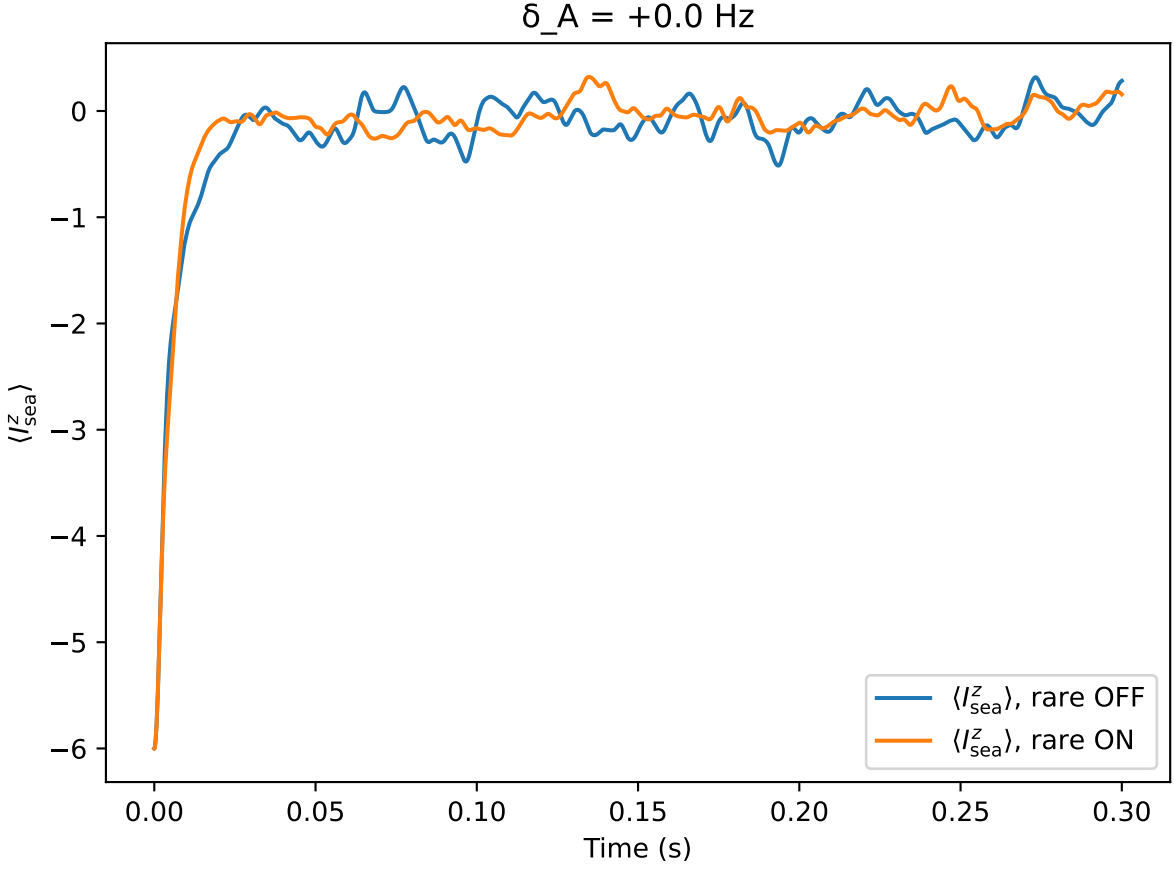
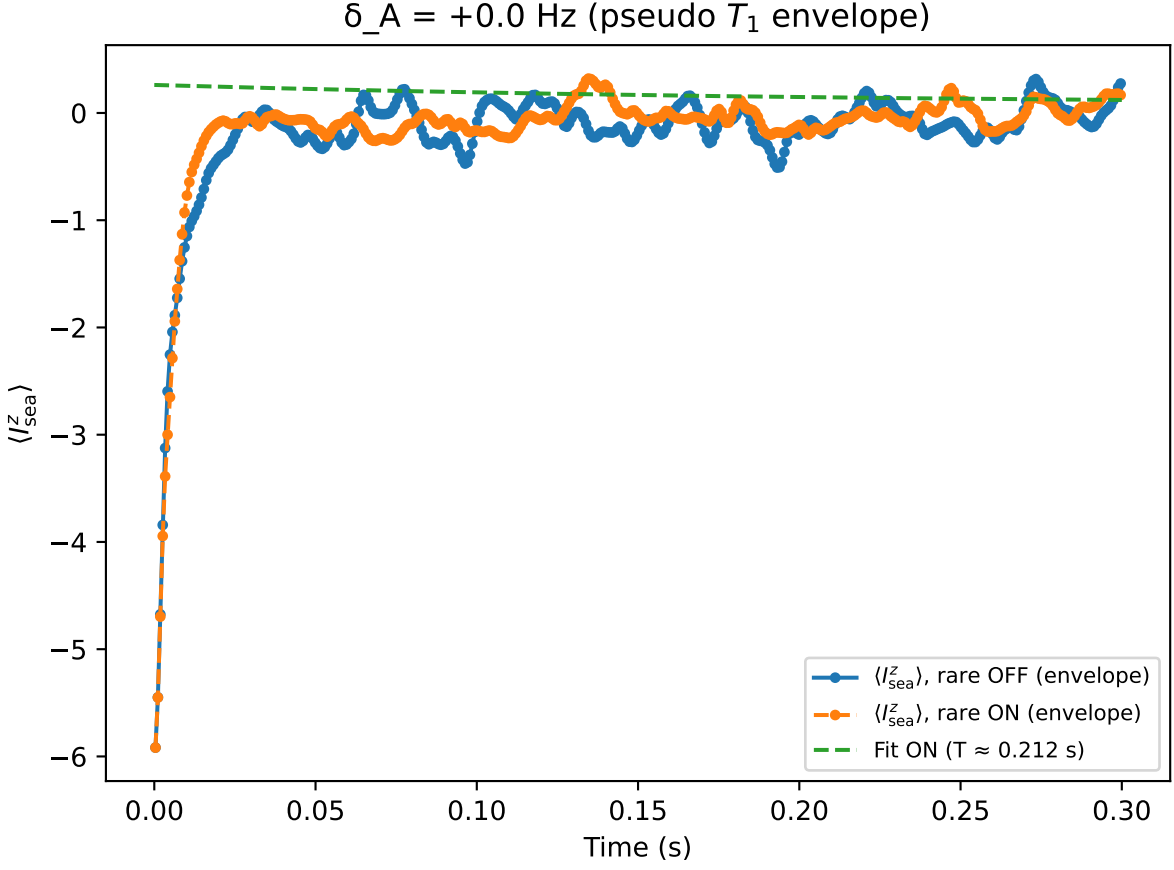
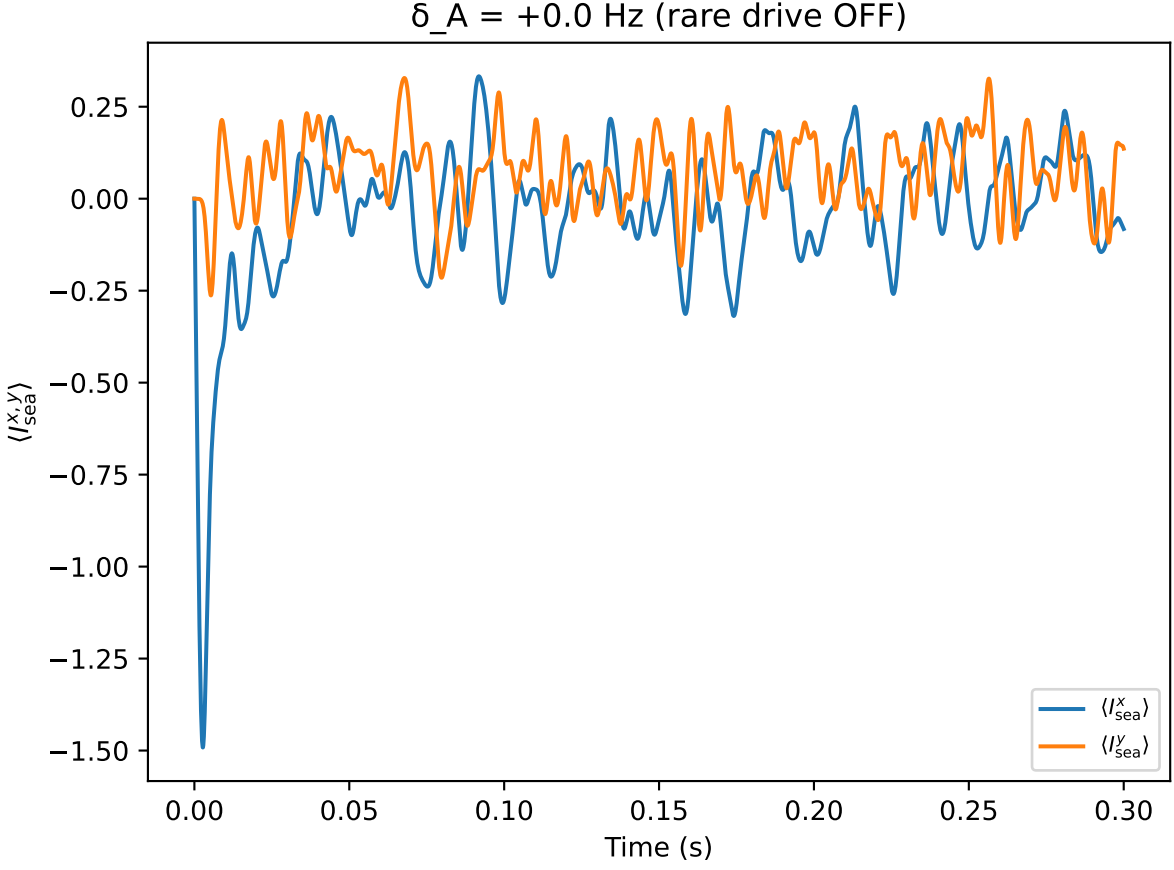
Sea detuning sweep report (Ga sea / Al rare)

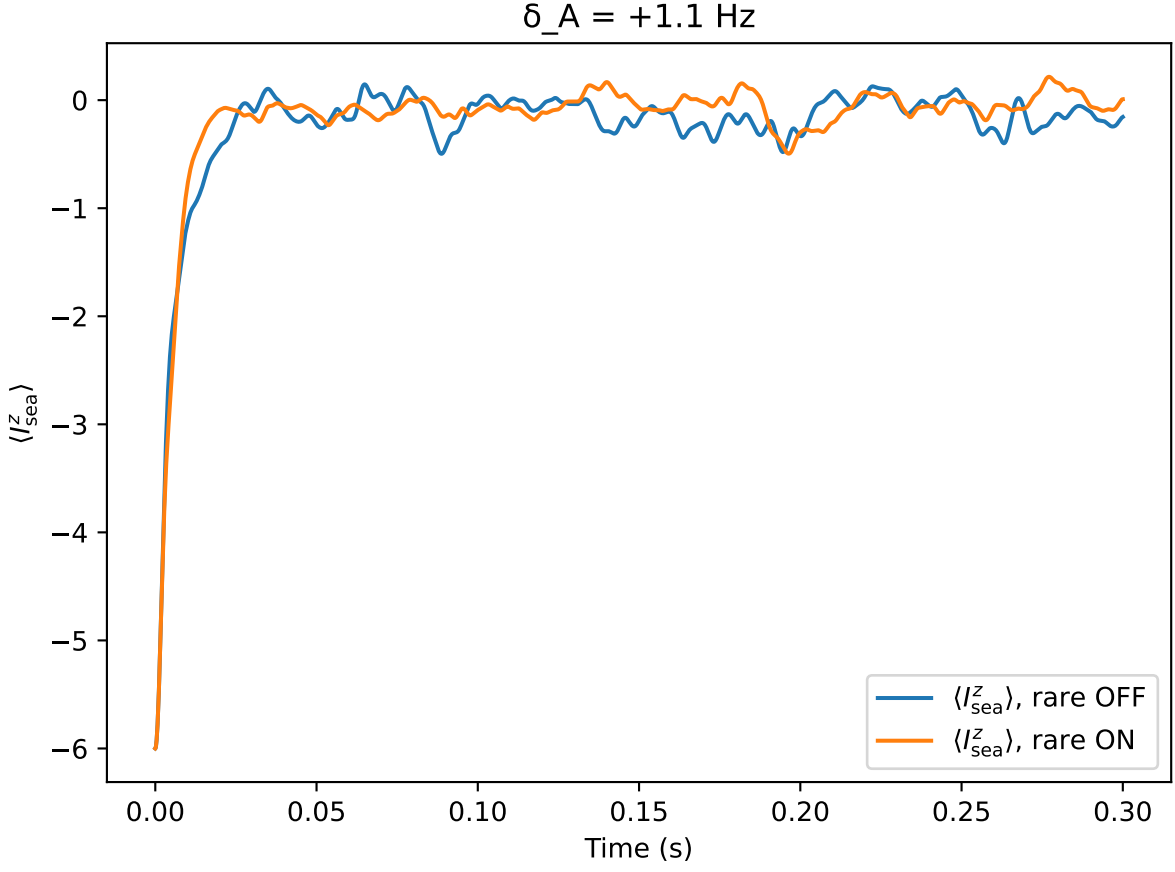
Global parameters (constant across sweep):
  f_Az (sea Larmor)   = 39.062 MHz
  f_Rz (rare Larmor)   = 33.308 MHz
  f1A (sea Rabi)   = 0.020 kHz
  f1R (rare Rabi)   = 0.200 kHz
  gamma_sea   = 8.181e+07 rad·s⁻¹·T⁻¹
  gamma_rare   = 6.976e+07 rad·s⁻¹·T⁻¹
  B0_common   = 3.000 T
  B1_sea   = 1.536e-06 T
  B1_rare   = 1.801e-05 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

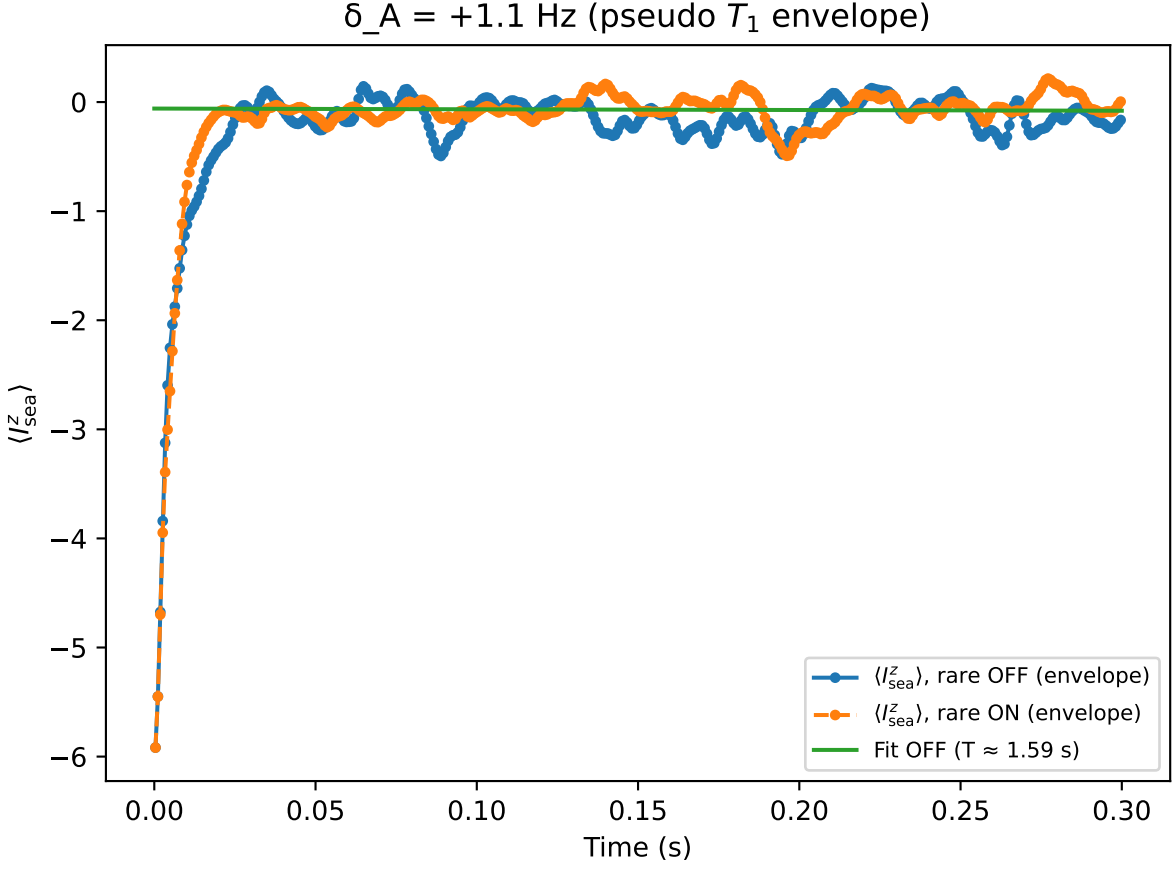
Sea detunings (δ_A = f_Az - f_rf,A) in Hz:
  +0.0, +1.1, +2.2, +3.3, +4.4, +5.6, +6.7, +7.8, +8.9, +10.0

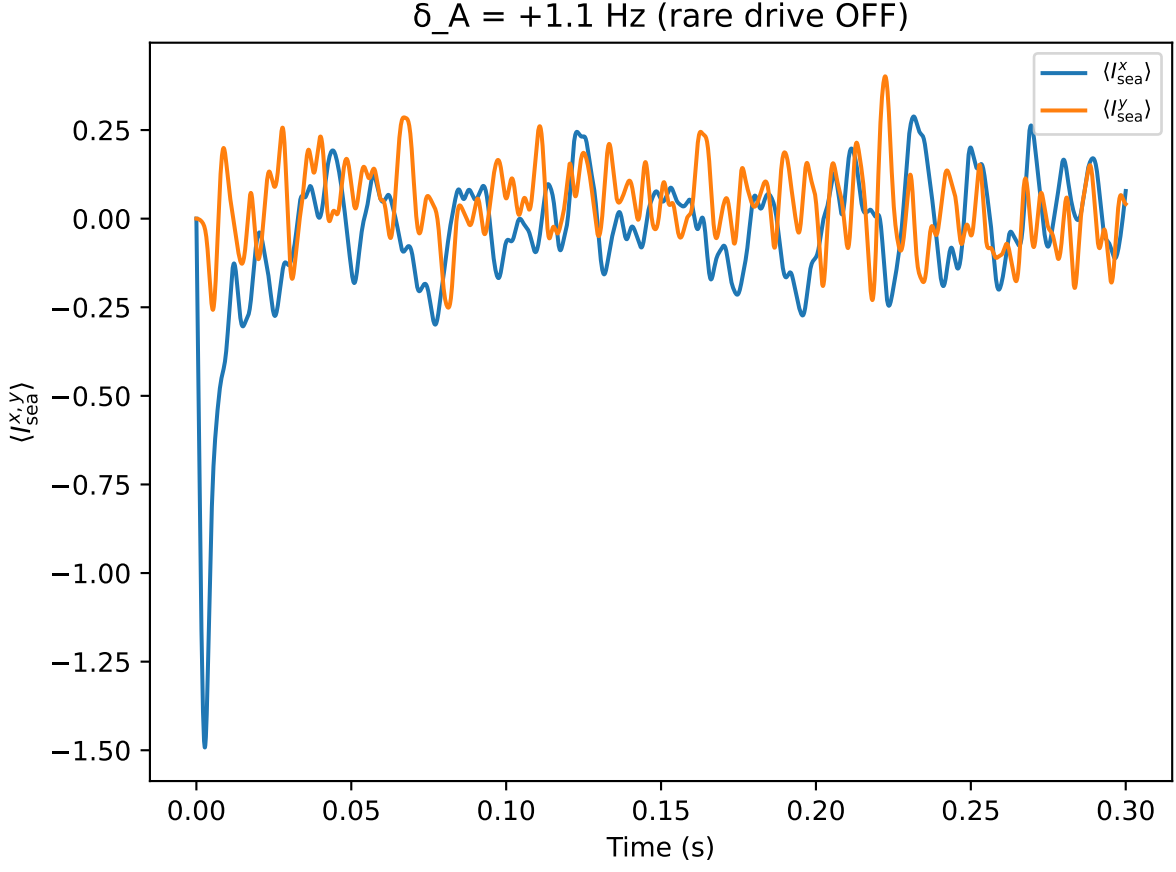

δ_A = +0.0 Hz
0
−1
−2
−3
−4
−5
−6
⟨I^z_sea⟩
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
⟨I^z_sea⟩, rare OFF
⟨I^z_sea⟩, rare ON

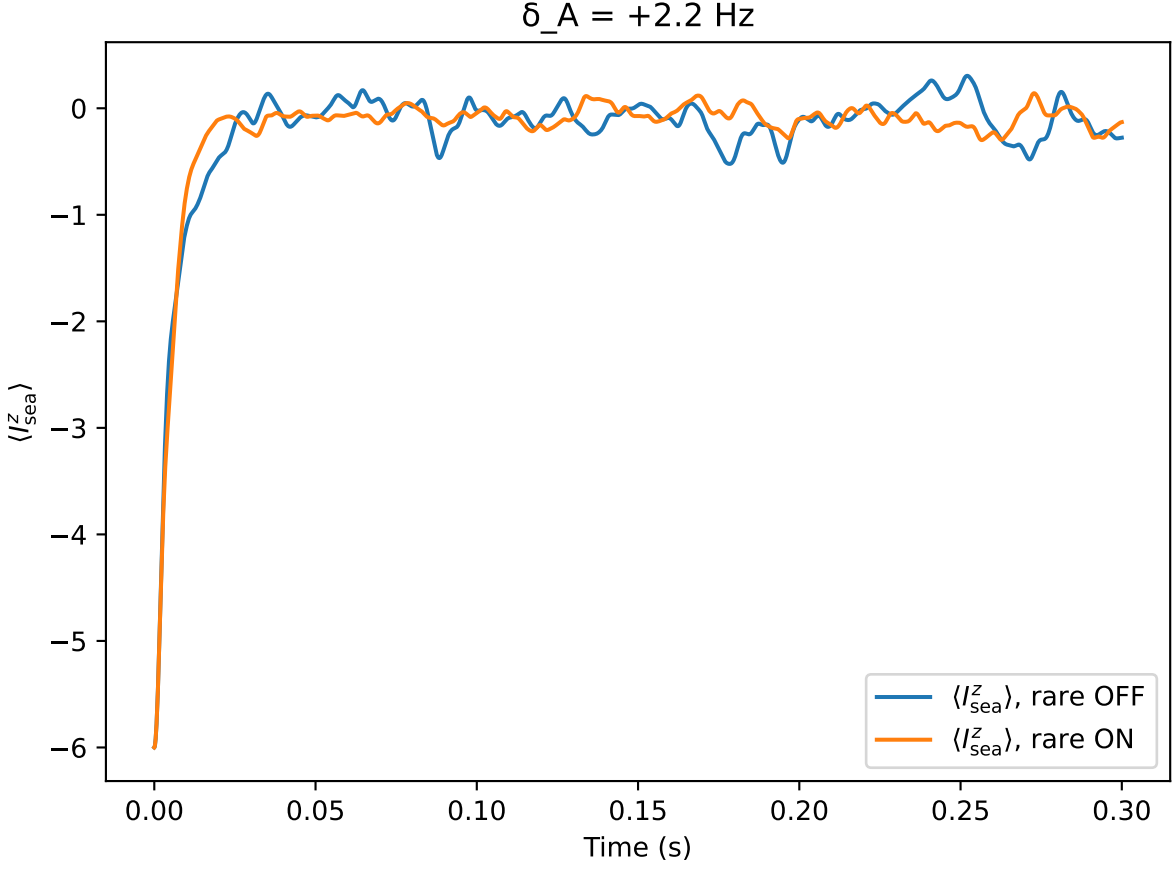

δ_A = +0.0 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
0
−1
−2
−3
−4
−5
−6
0.00
0.05
0.10
0.15
0.20
0.25
0.30
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit ON (T ≈ 0.212 s)

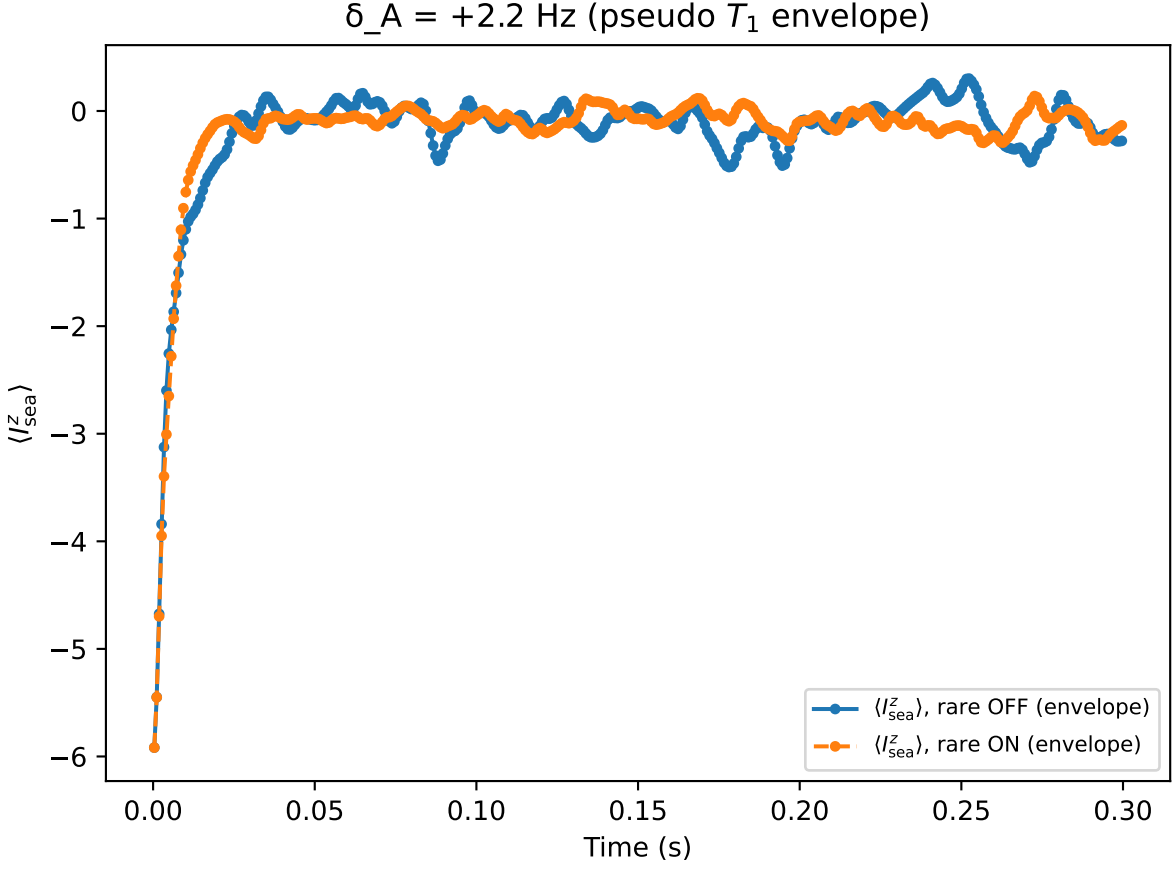

δ_A = +0.0 Hz (rare drive OFF)
0.25
0.00
−0.25
−0.50
−0.75
−1.00
−1.25
−1.50
$\langle I^{x,y}_{\mathrm{sea}} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^{x}_{\mathrm{sea}} \rangle$
$\langle I^{y}_{\mathrm{sea}} \rangle$

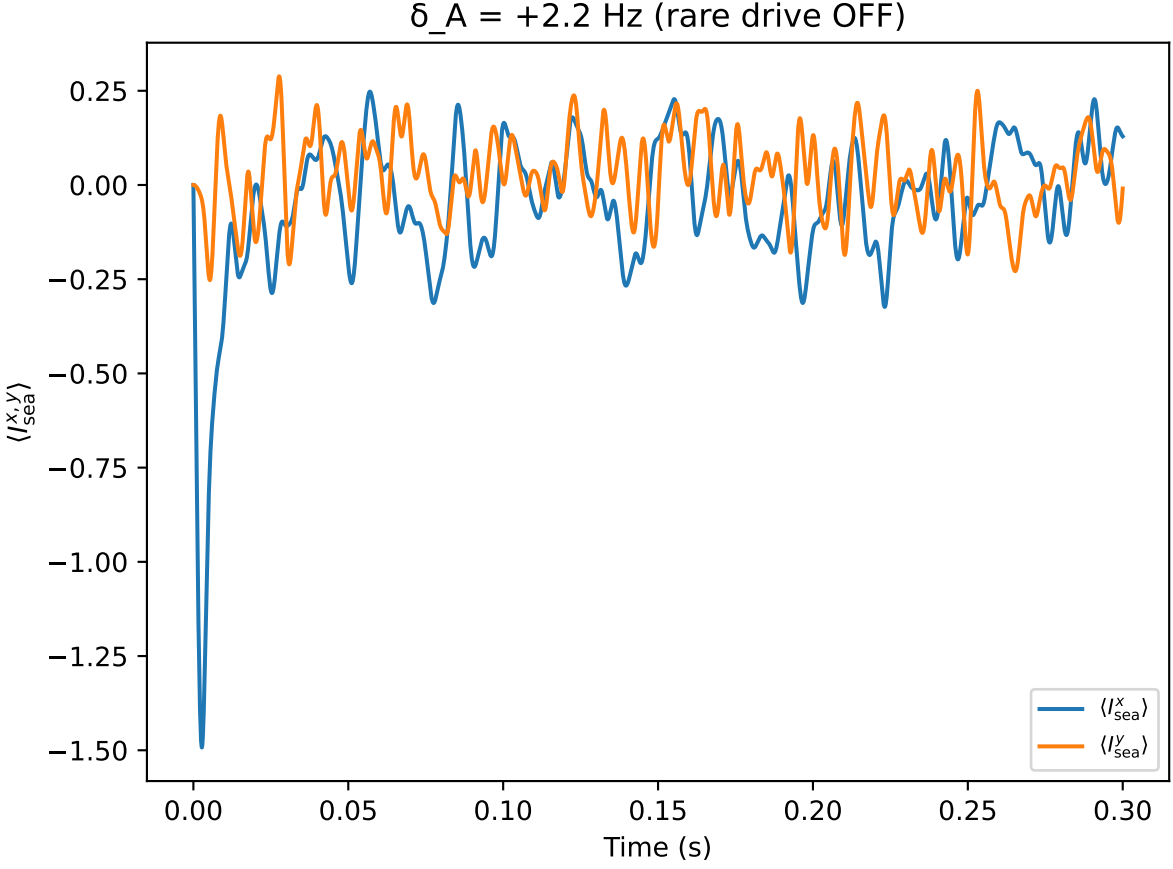

δ_A = +1.1 Hz
0
−1
−2
−3
−4
−5
−6
⟨I^z_sea⟩
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
⟨I^z_sea⟩, rare OFF
⟨I^z_sea⟩, rare ON

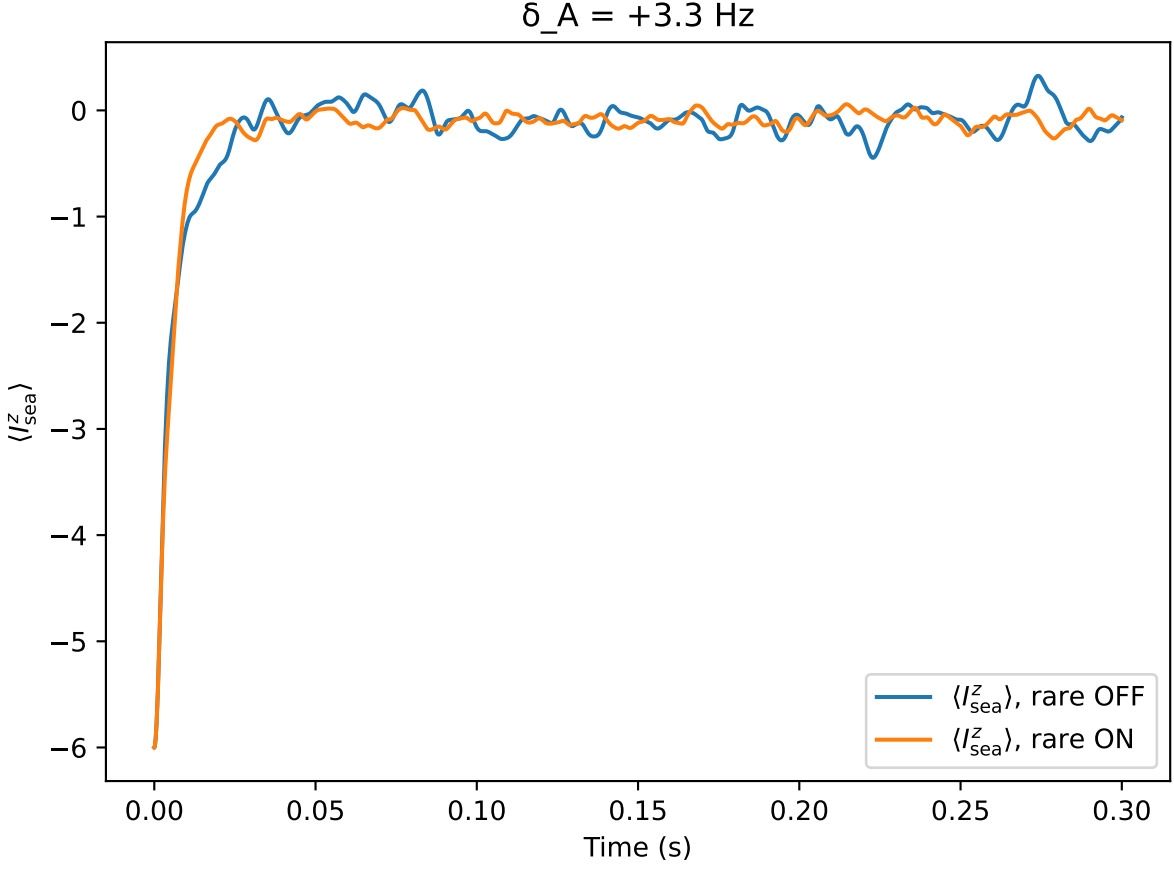

δ_A = +1.1 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
0
−1
−2
−3
−4
−5
−6
0.00
0.05
0.10
0.15
0.20
0.25
0.30
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 1.59 s)

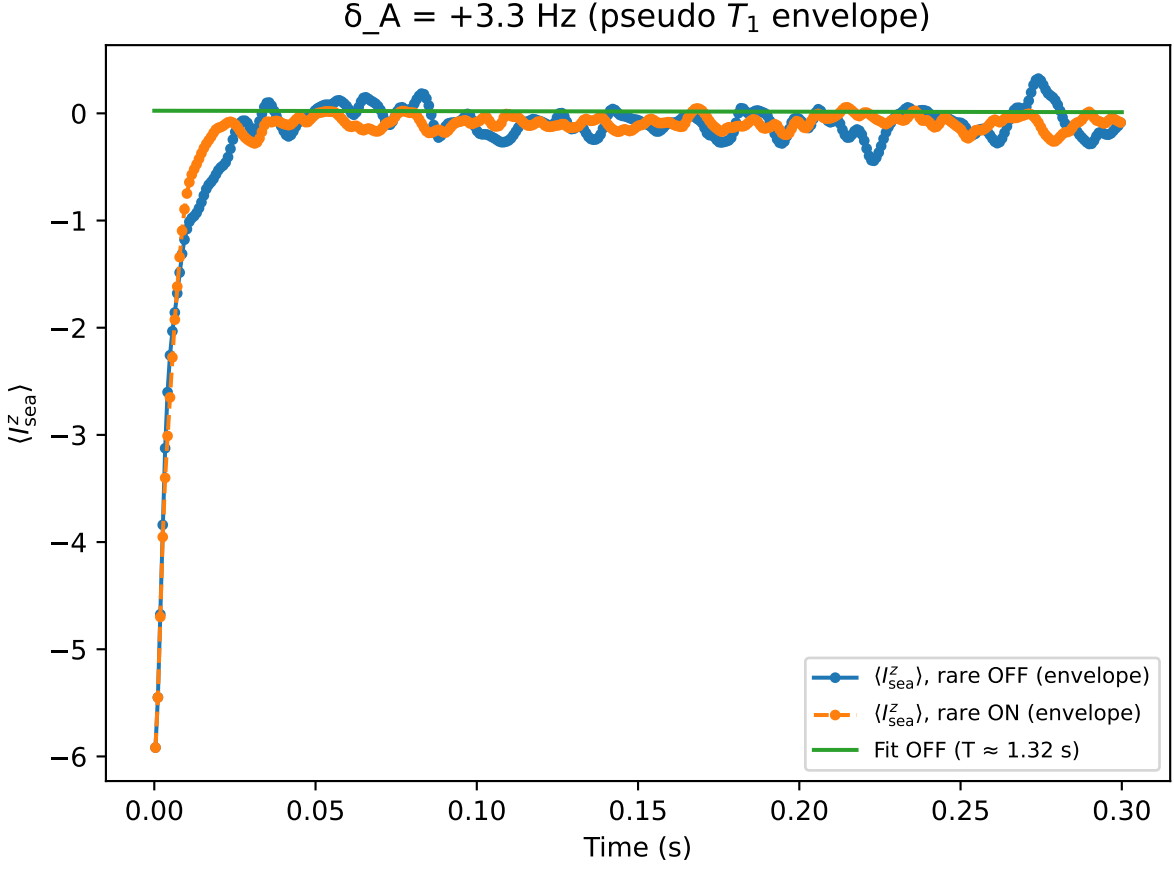

δ_A = +1.1 Hz (rare drive OFF)
$\langle I^x_{sea} \rangle$
$\langle I^y_{sea} \rangle$
$\langle I^{x,y}_{sea} \rangle$
0.25
0.00
−0.25
−0.50
−0.75
−1.00
−1.25
−1.50
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)

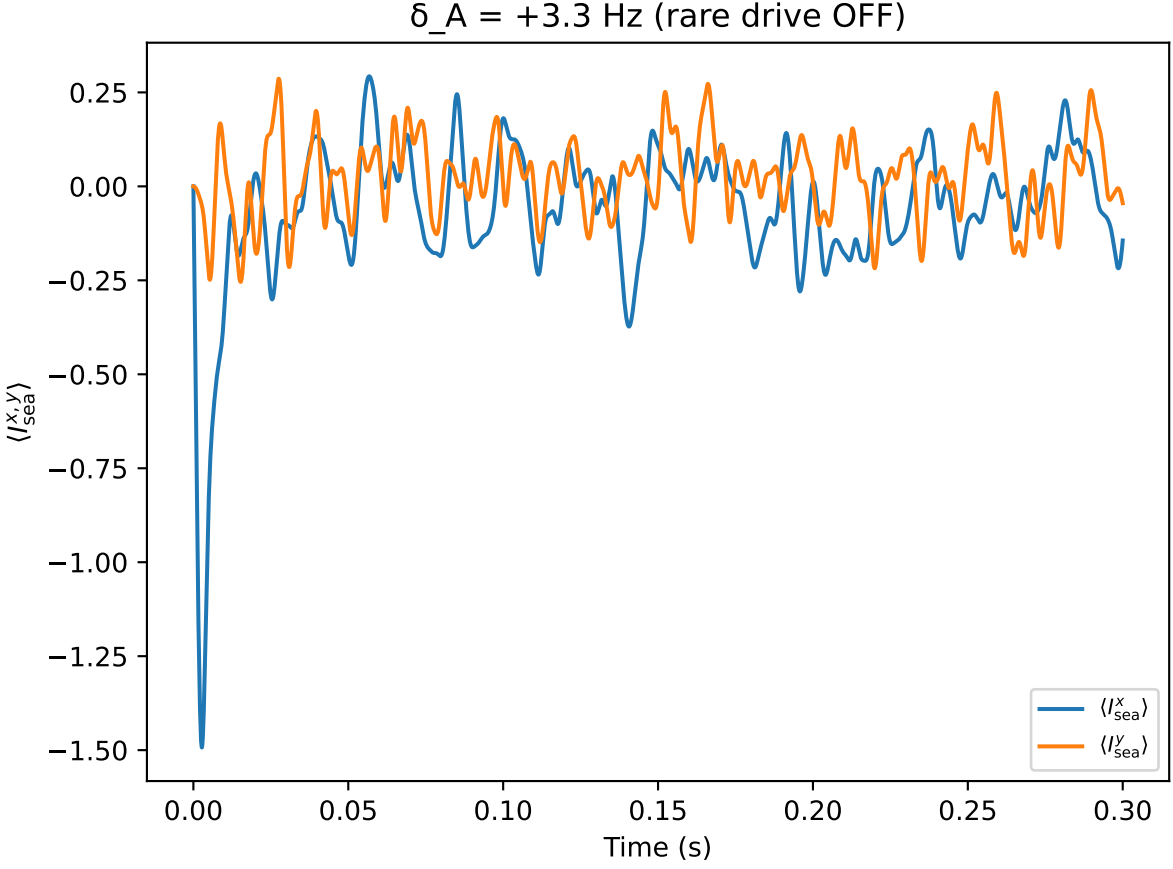

δ_A = +2.2 Hz
0
−1
−2
−3
−4
−5
−6
$\langle I^z_{sea} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF
$\langle I^z_{sea} \rangle$, rare ON

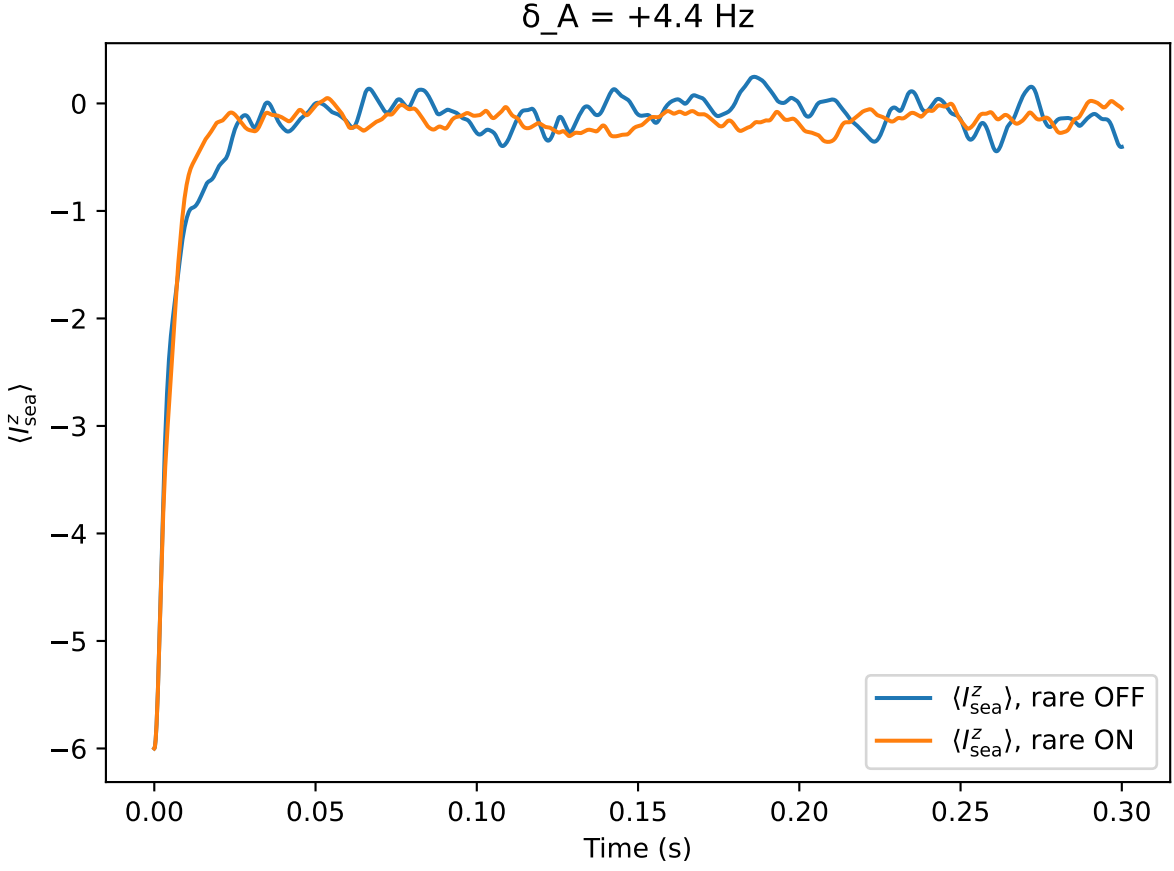

δ_A = +2.2 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
0
−1
−2
−3
−4
−5
−6
0.00
0.05
0.10
0.15
0.20
0.25
0.30
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)

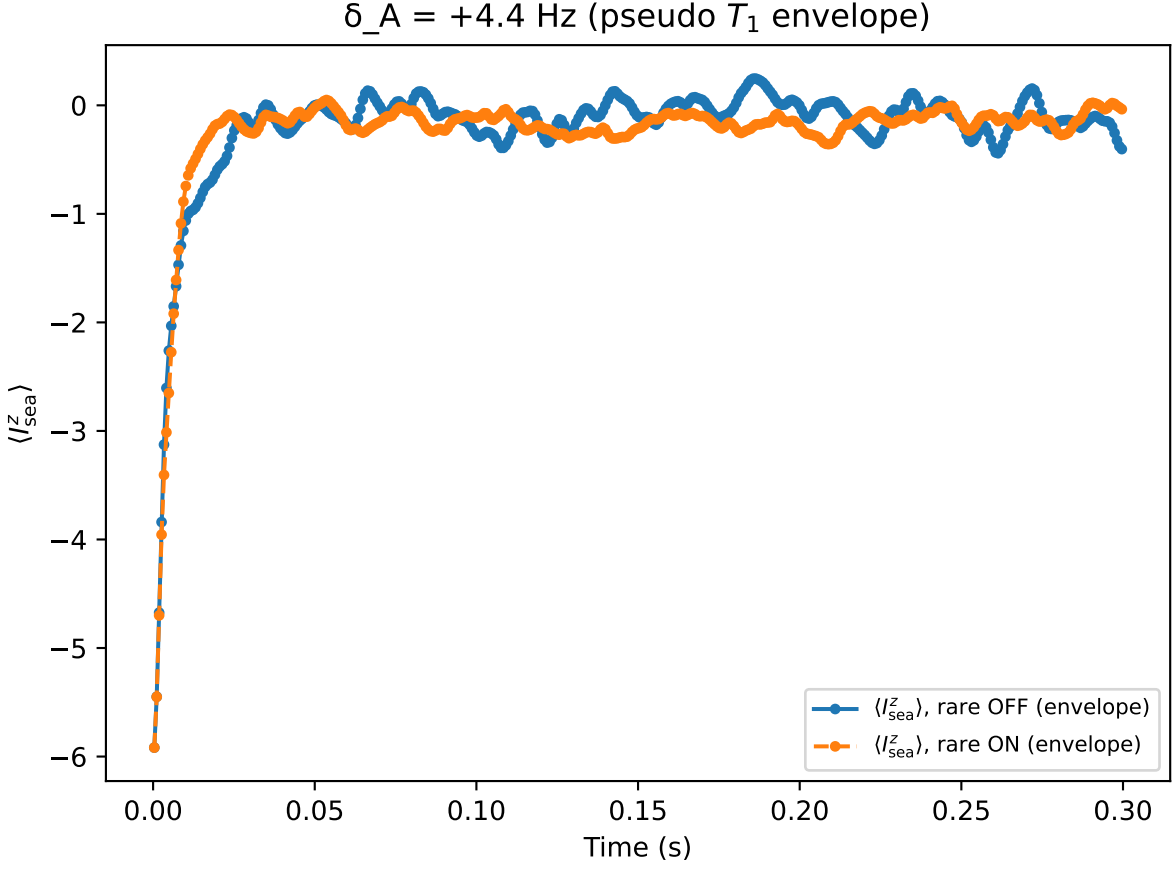

δ_A = +2.2 Hz (rare drive OFF)
0.25
0.00
−0.25
−0.50
−0.75
−1.00
−1.25
−1.50
$\langle I^{x,y}_{\mathrm{sea}} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^{x}_{\mathrm{sea}} \rangle$
$\langle I^{y}_{\mathrm{sea}} \rangle$

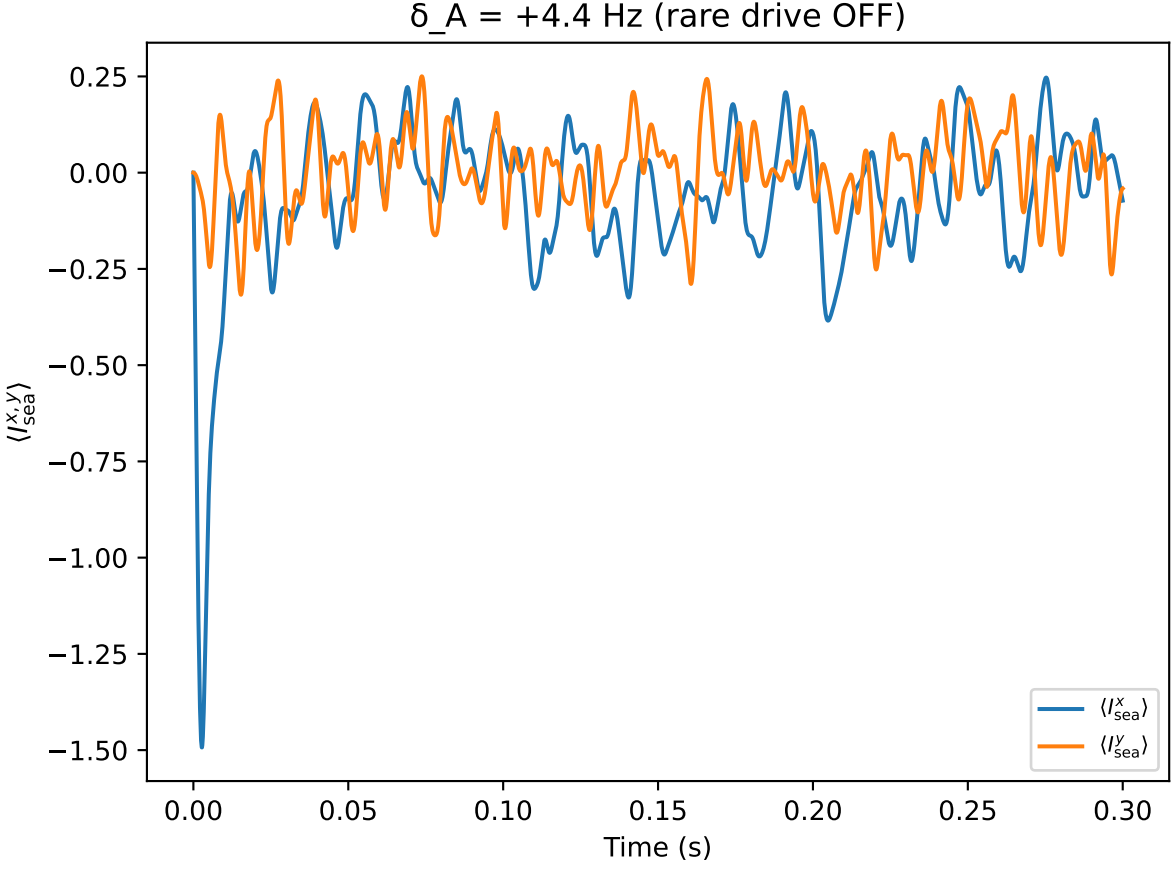

δ_A = +3.3 Hz
0
−1
−2
−3
−4
−5
−6
$\langle I^z_{sea} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF
$\langle I^z_{sea} \rangle$, rare ON

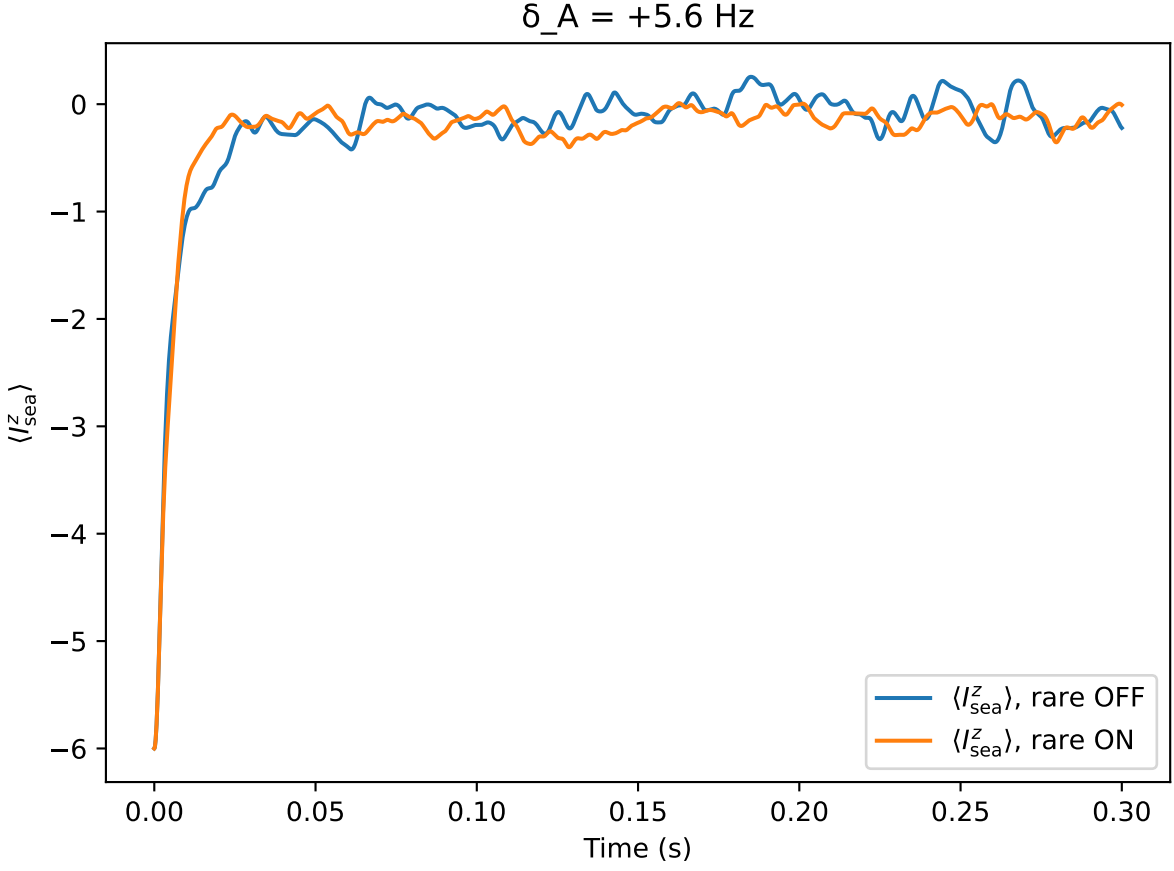

δ_A = +3.3 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
0
−1
−2
−3
−4
−5
−6
0.00
0.05
0.10
0.15
0.20
0.25
0.30
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 1.32 s)

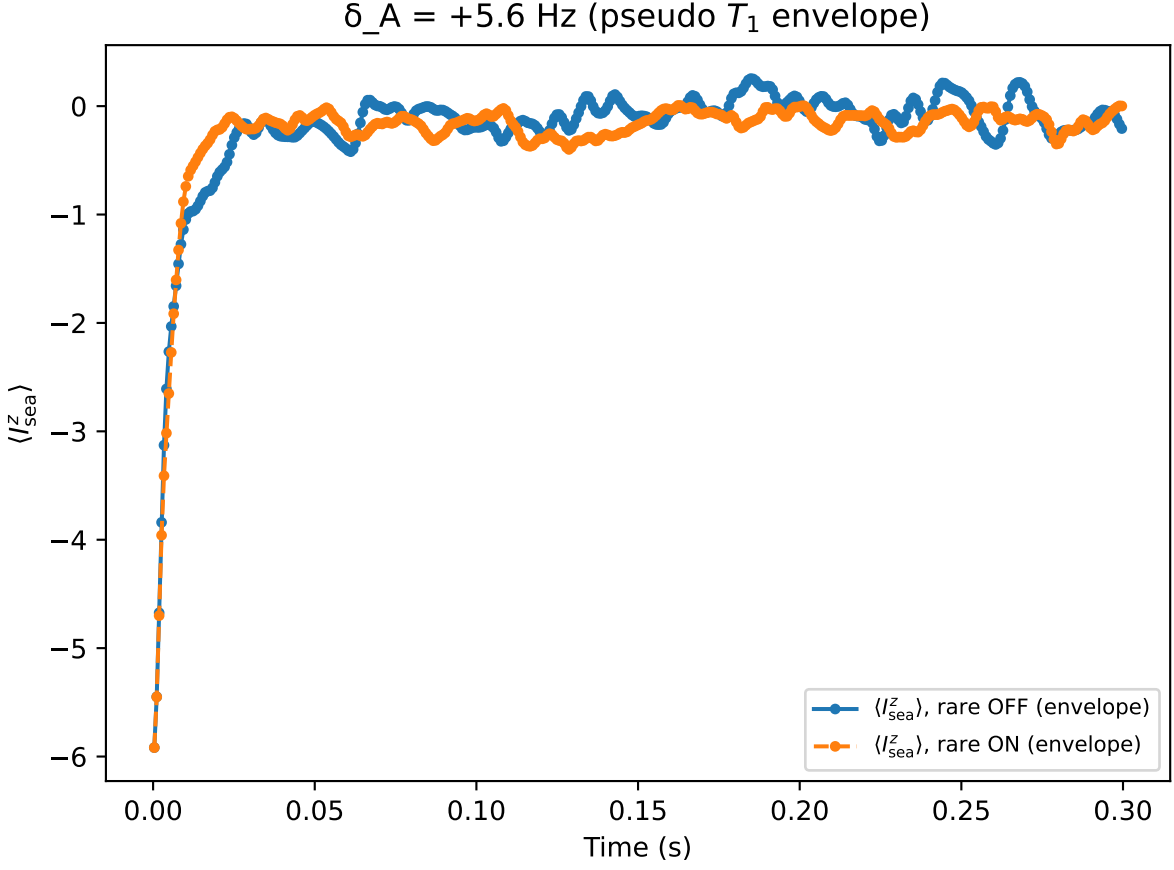

δ_A = +3.3 Hz (rare drive OFF)
0.25
0.00
−0.25
−0.50
−0.75
−1.00
−1.25
−1.50
$\langle I^{x,y}_{\mathrm{sea}} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^{x}_{\mathrm{sea}} \rangle$
$\langle I^{y}_{\mathrm{sea}} \rangle$

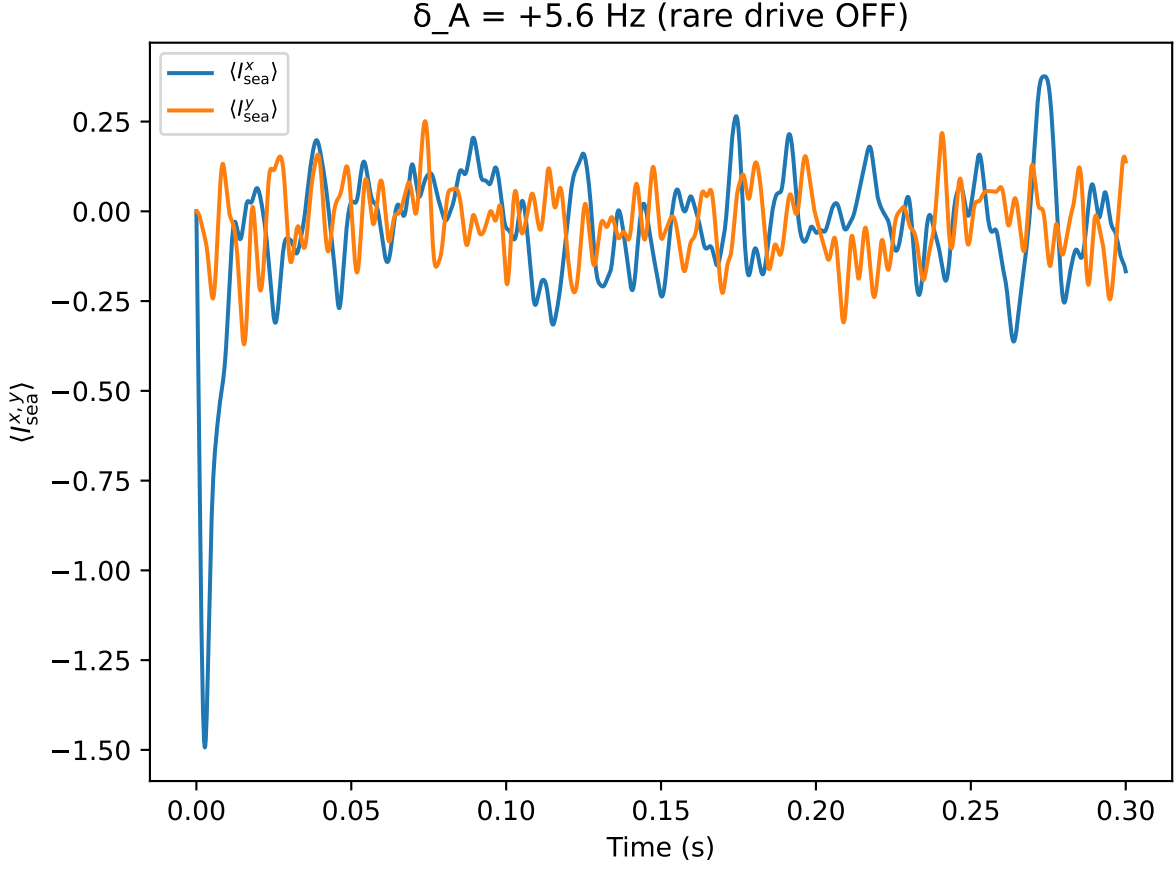

δ_A = +4.4 Hz
0
−1
−2
−3
−4
−5
−6
⟨I^z_sea⟩
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
⟨I^z_sea⟩, rare OFF
⟨I^z_sea⟩, rare ON

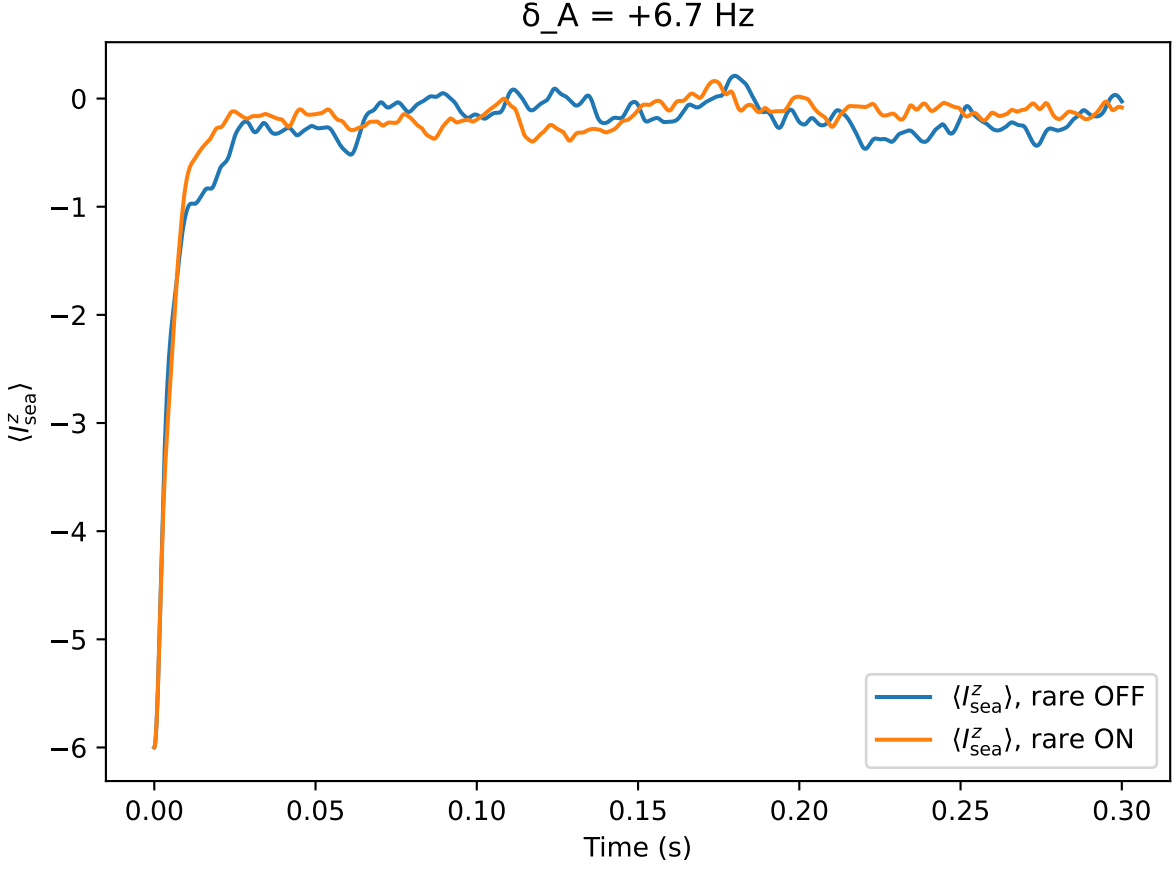

δ_A = +4.4 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
0
−1
−2
−3
−4
−5
−6
0.00
0.05
0.10
0.15
0.20
0.25
0.30
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)

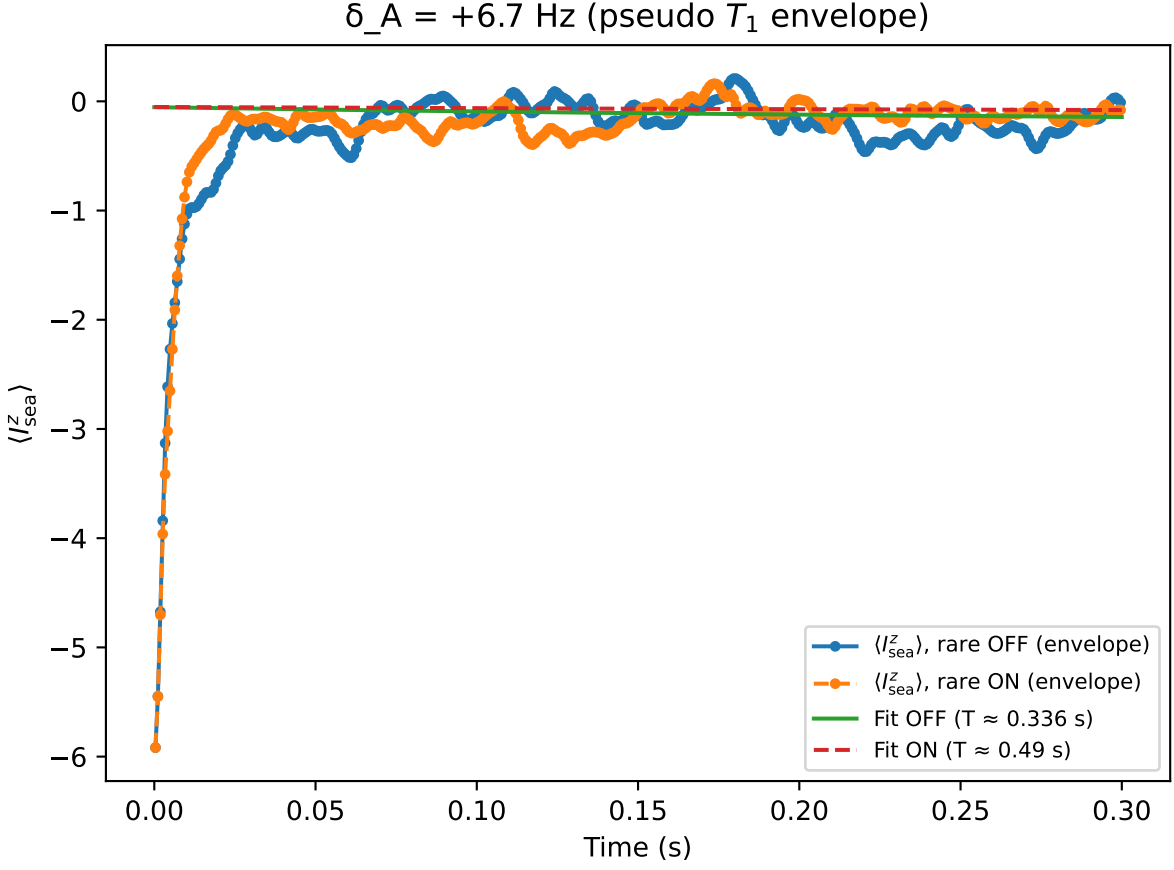

δ_A = +4.4 Hz (rare drive OFF)
0.25
0.00
−0.25
−0.50
−0.75
−1.00
−1.25
−1.50
$\langle I^{x,y}_{\mathrm{sea}} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^{x}_{\mathrm{sea}} \rangle$
$\langle I^{y}_{\mathrm{sea}} \rangle$

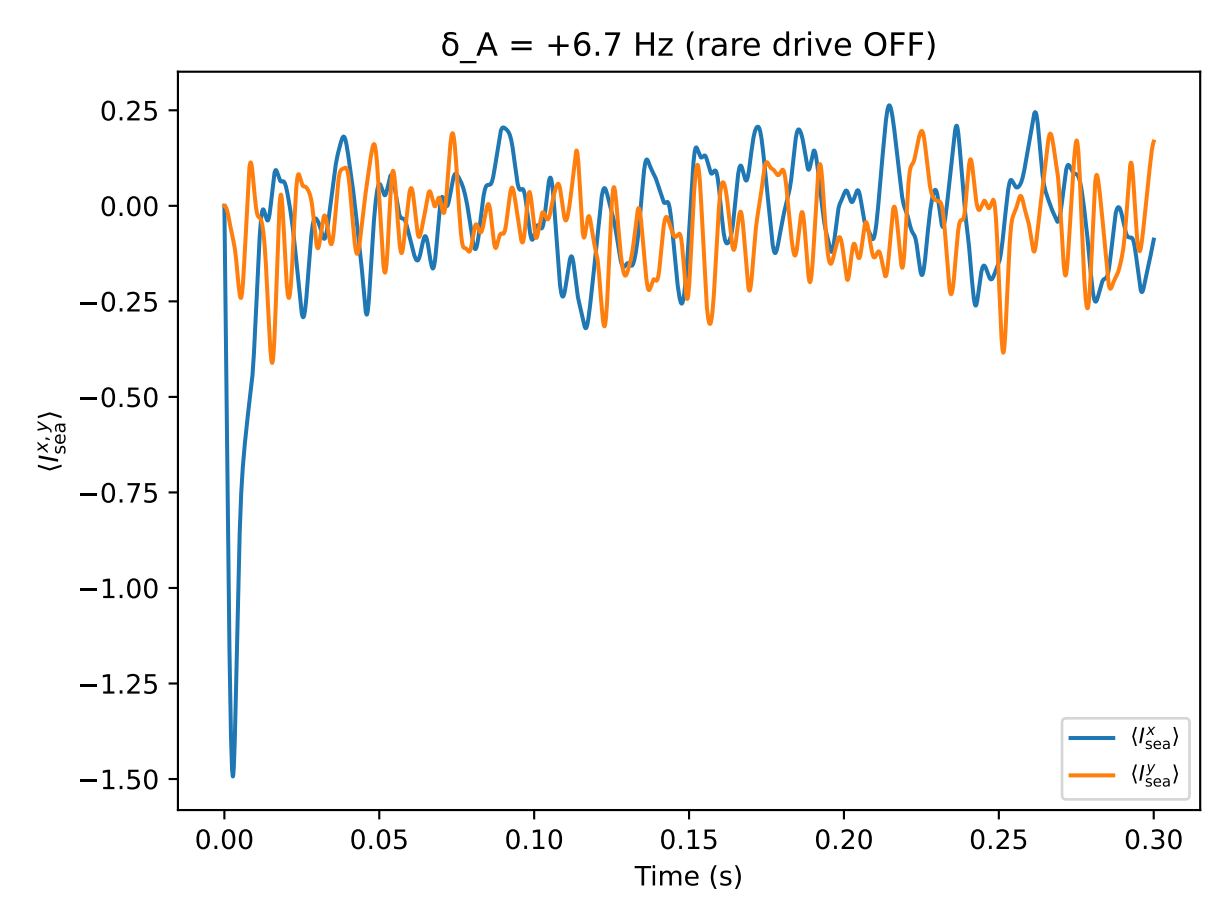

δ_A = +5.6 Hz
0
−1
−2
−3
−4
−5
−6
$\langle I^z_{sea} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF
$\langle I^z_{sea} \rangle$, rare ON

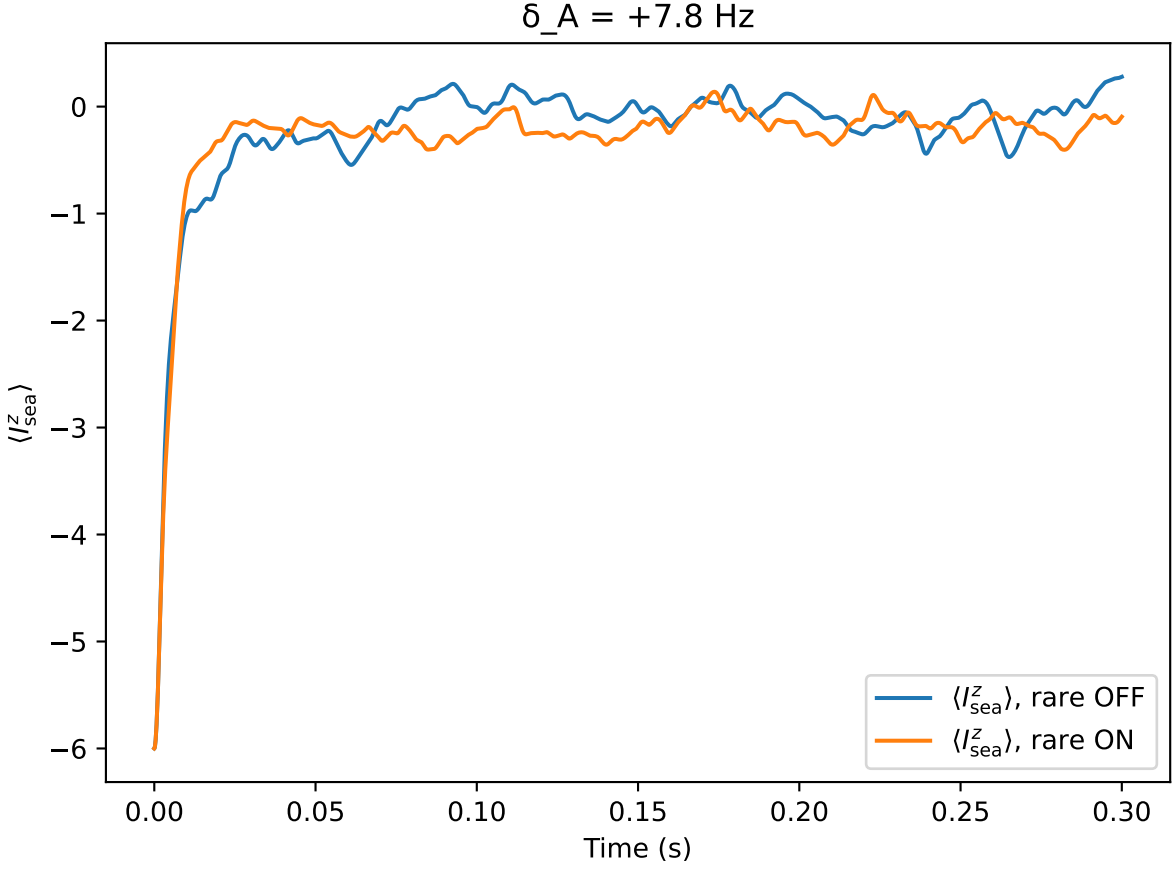

δ_A = +5.6 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
0
−1
−2
−3
−4
−5
−6
0.00
0.05
0.10
0.15
0.20
0.25
0.30
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)

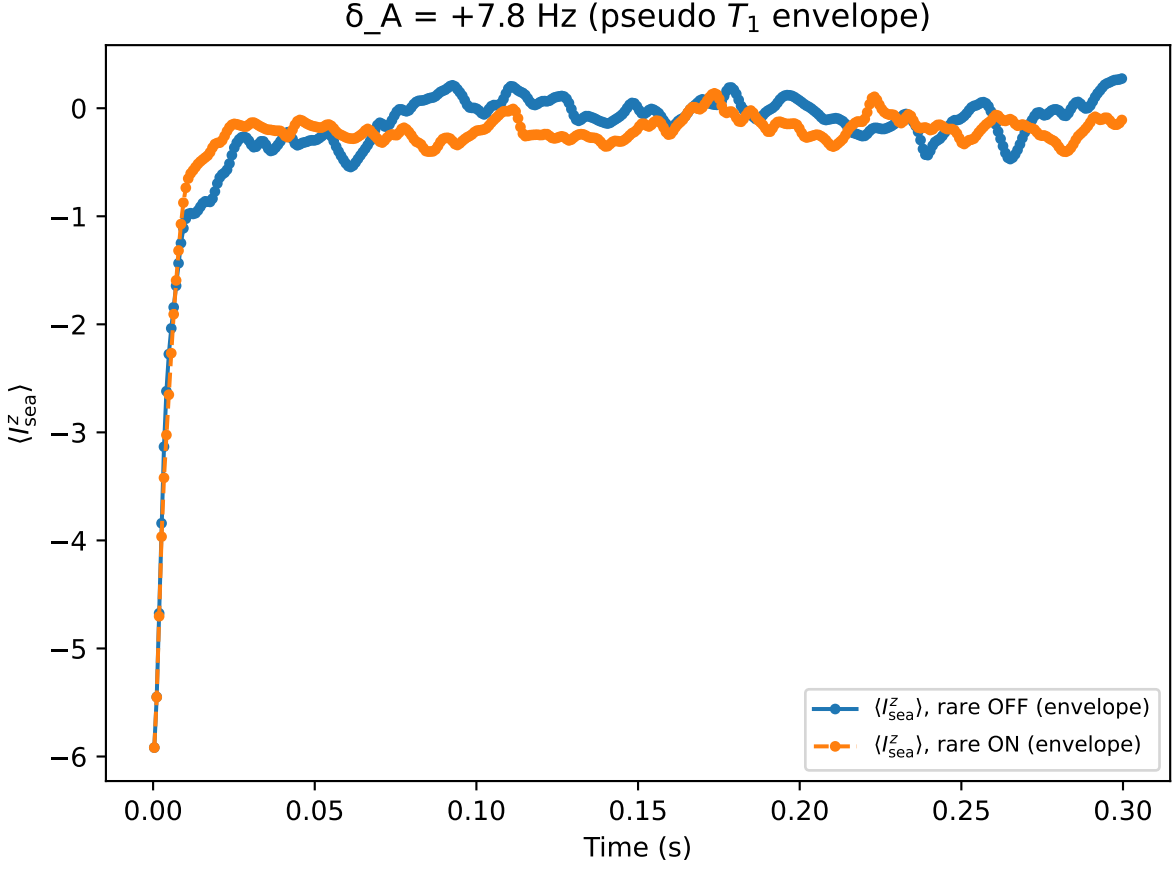

δ_A = +5.6 Hz (rare drive OFF)
⟨I^x_sea⟩
⟨I^y_sea⟩
0.25
0.00
−0.25
−0.50
−0.75
−1.00
−1.25
−1.50
⟨I^{x,y}_sea⟩
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)

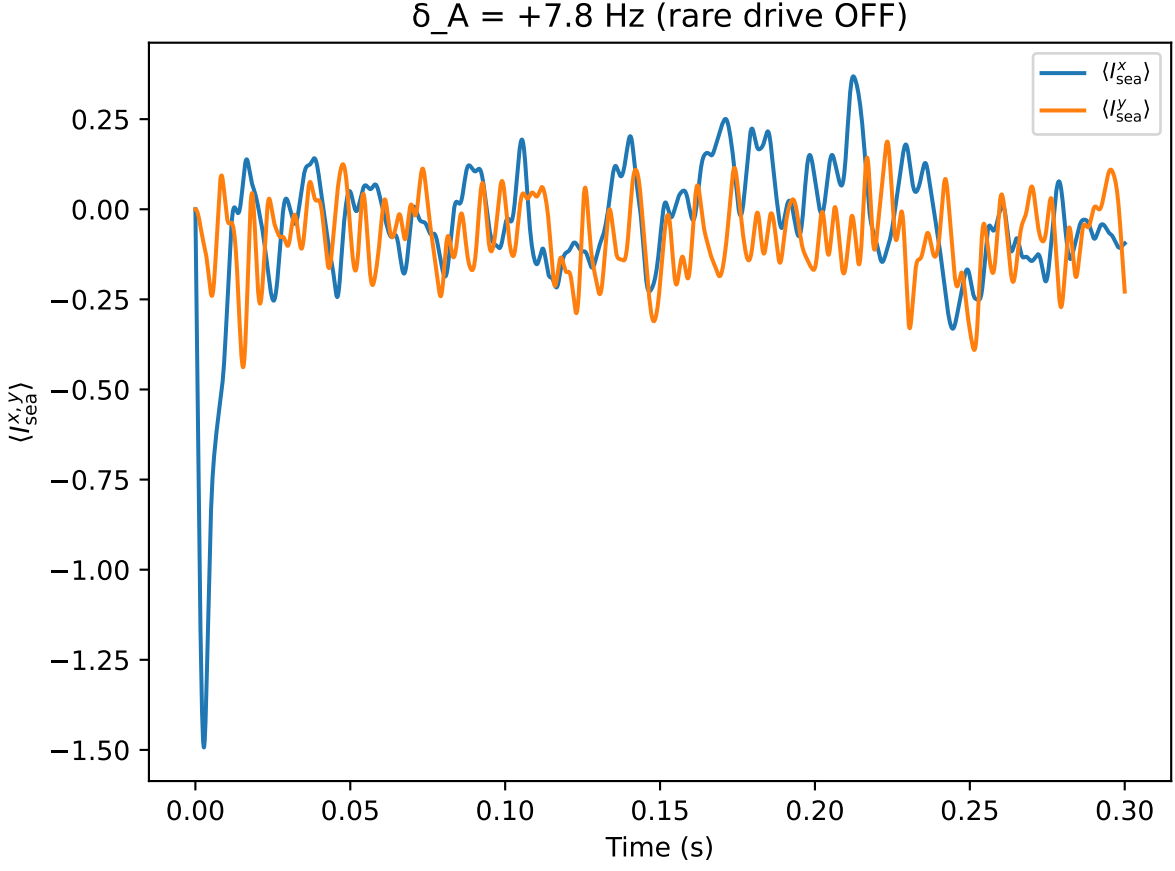

δ_A = +6.7 Hz
0
−1
−2
−3
−4
−5
−6
$\langle I^z_{sea} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF
$\langle I^z_{sea} \rangle$, rare ON

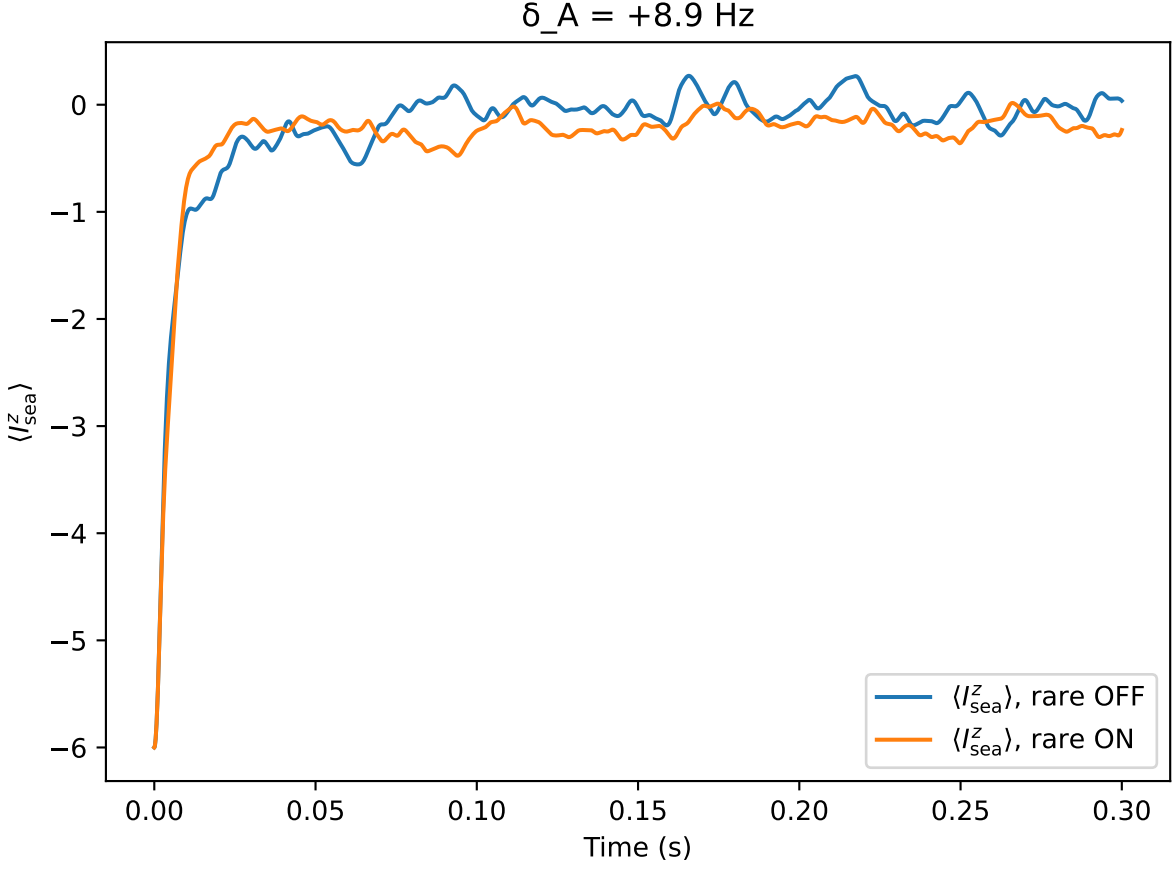

δ_A = +6.7 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
0
−1
−2
−3
−4
−5
−6
0.00
0.05
0.10
0.15
0.20
0.25
0.30
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 0.336 s)
Fit ON (T ≈ 0.49 s)

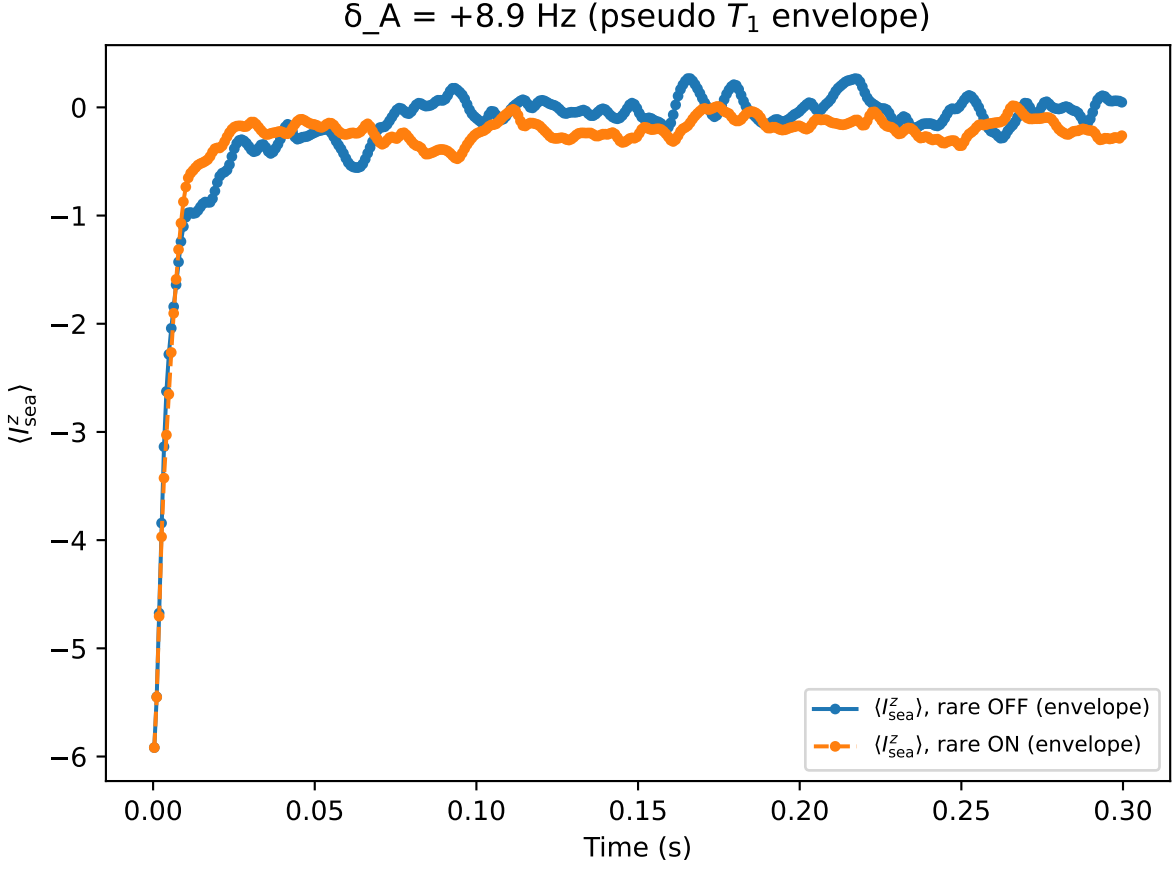

δ_A = +6.7 Hz (rare drive OFF)
0.25
0.00
−0.25
−0.50
−0.75
−1.00
−1.25
−1.50
$\langle I^{x,y}_{\mathrm{sea}} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^{x}_{\mathrm{sea}} \rangle$
$\langle I^{y}_{\mathrm{sea}} \rangle$

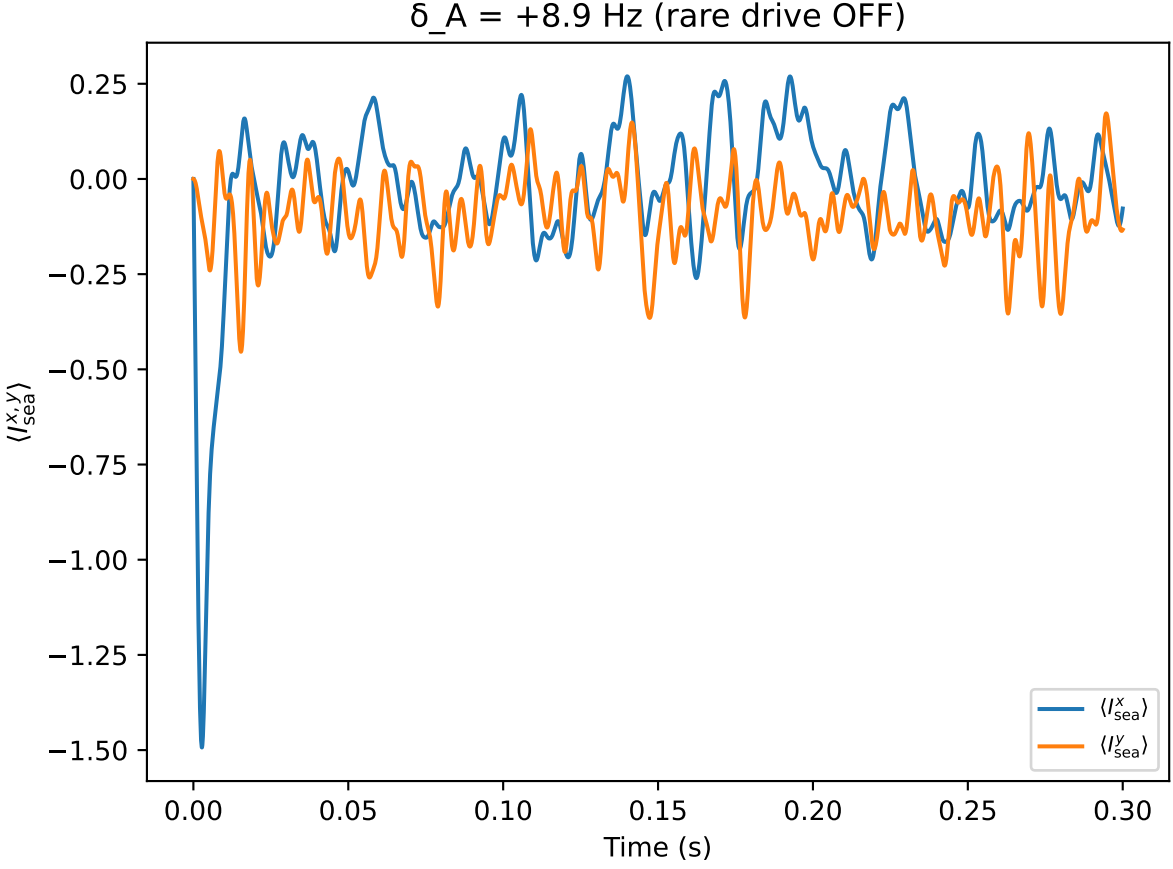

δ_A = +7.8 Hz
0
−1
−2
−3
−4
−5
−6
$\langle I^z_{sea} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF
$\langle I^z_{sea} \rangle$, rare ON

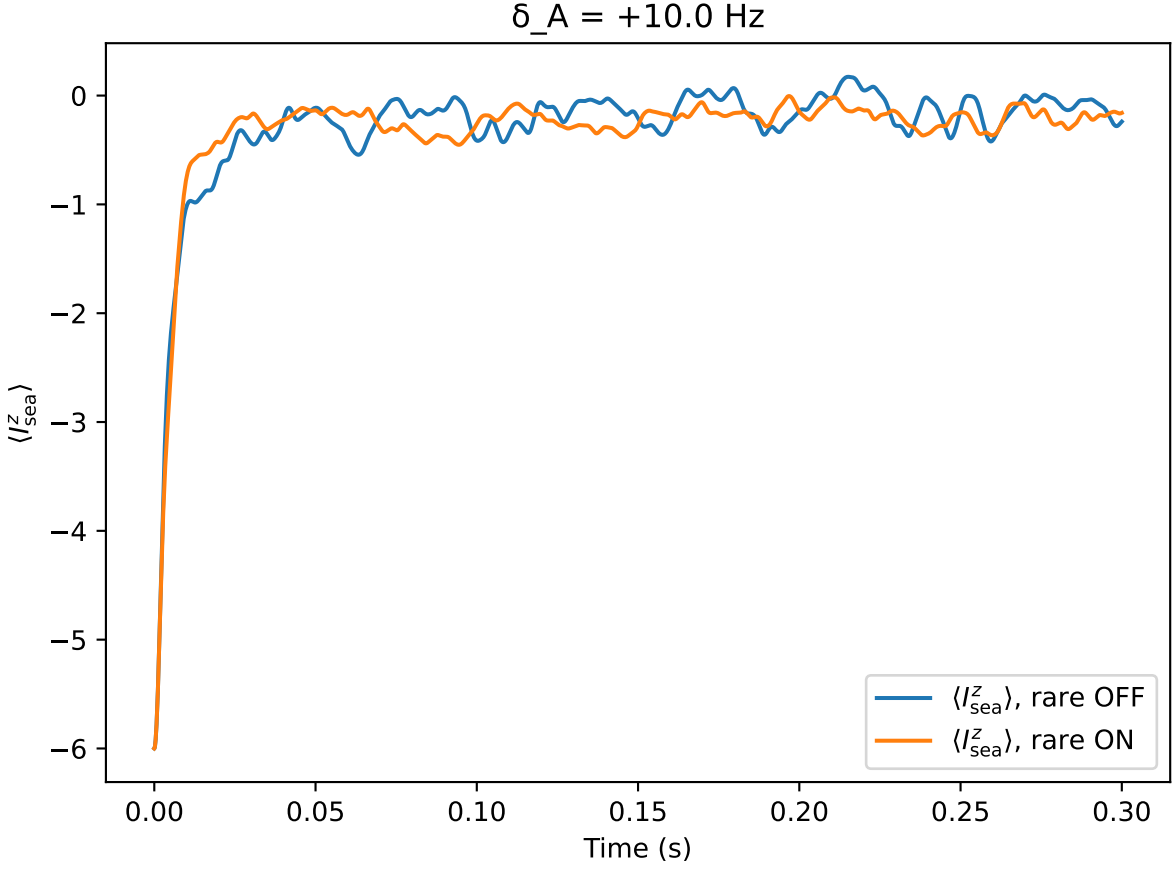

δ_A = +7.8 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
0
−1
−2
−3
−4
−5
−6
0.00
0.05
0.10
0.15
0.20
0.25
0.30
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)

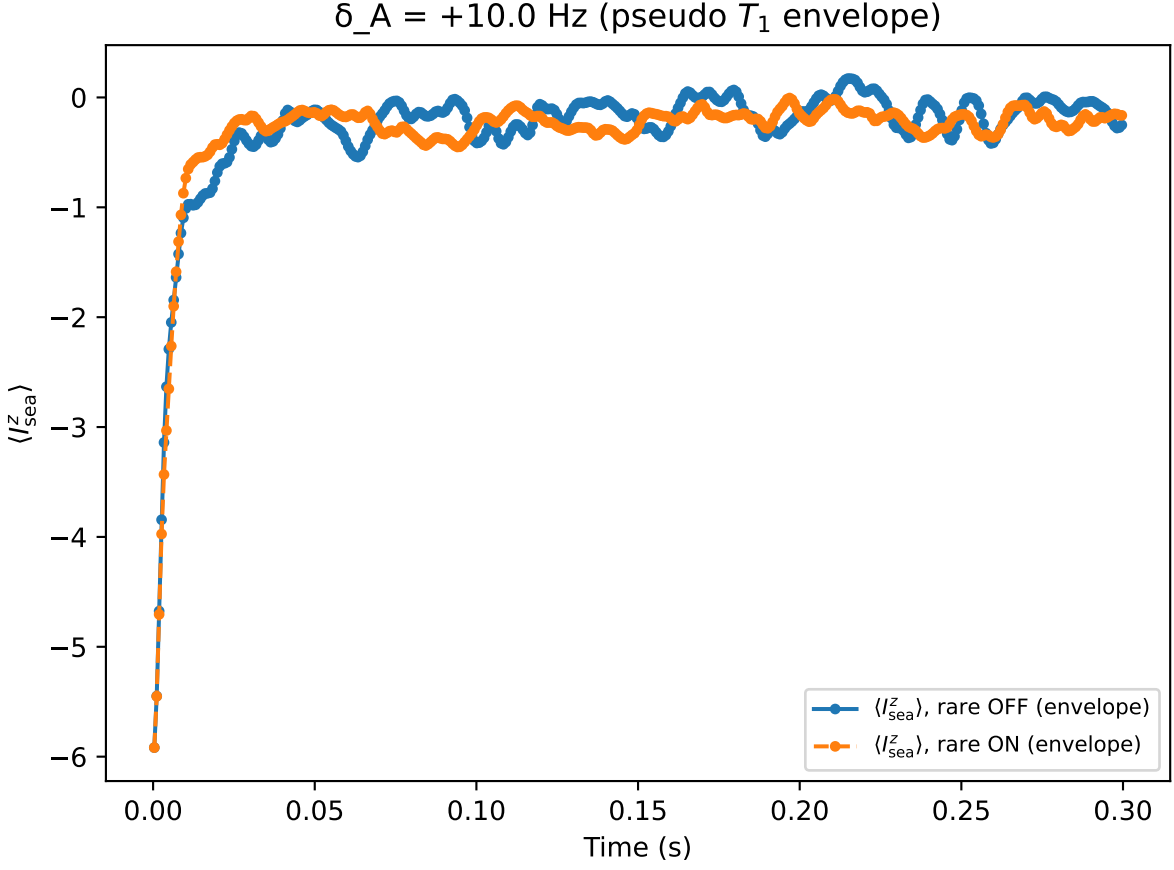

δ_A = +7.8 Hz (rare drive OFF)
$\langle I^x_{sea} \rangle$
$\langle I^y_{sea} \rangle$
0.25
0.00
−0.25
−0.50
−0.75
−1.00
−1.25
−1.50
$\langle I^{x,y}_{sea} \rangle$
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)

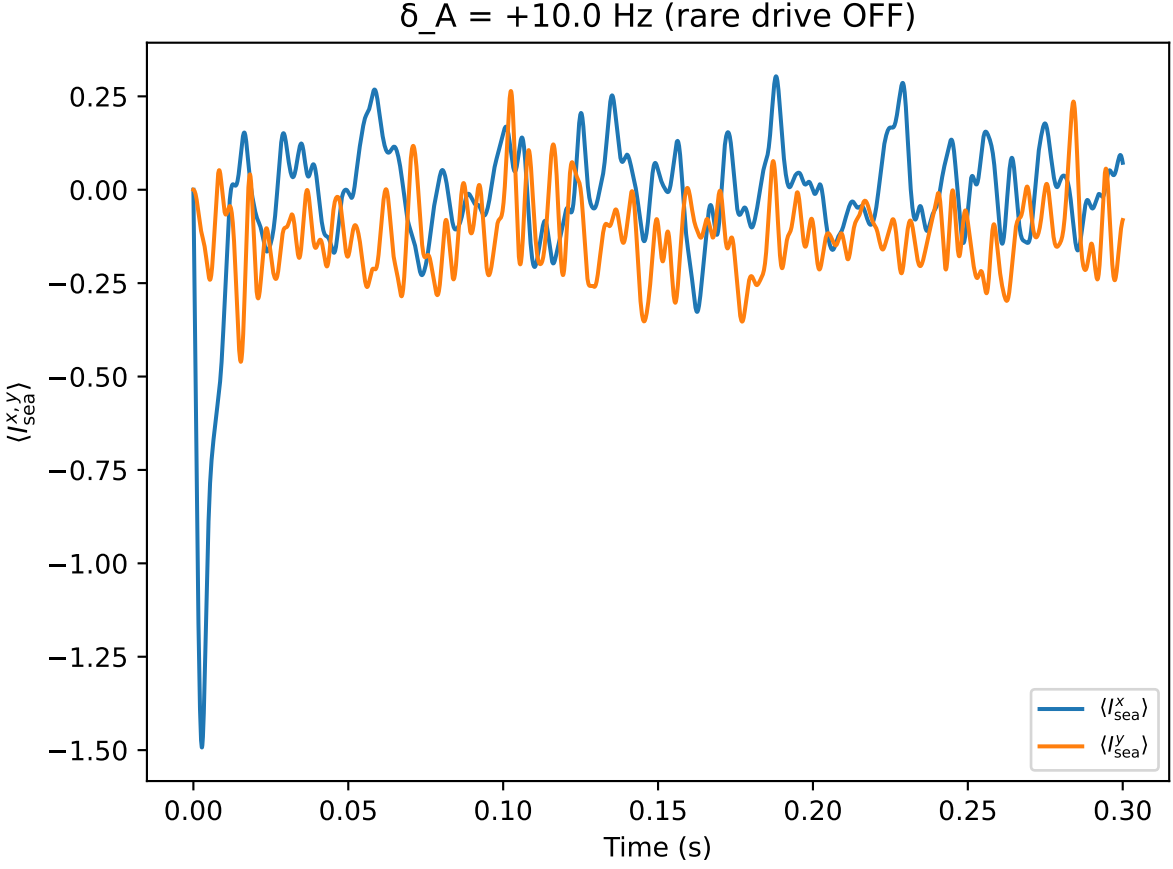

δ_A = +8.9 Hz
0
−1
−2
−3
−4
−5
−6
⟨I^z_sea⟩
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Time (s)
⟨I^z_sea⟩, rare OFF
⟨I^z_sea⟩, rare ON


δ_A = +8.9 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 = +8.9 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
$\langle I^z_{sea} \rangle$
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 = +10.0 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 = +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	0.212
+1.1	1.59	NA
+2.2	NA	NA
+3.3	1.32	NA
+4.4	NA	NA
+5.6	NA	NA
+6.7	0.336	0.49
+7.8	NA	NA
+8.9	NA	NA
+10.0	NA	NA