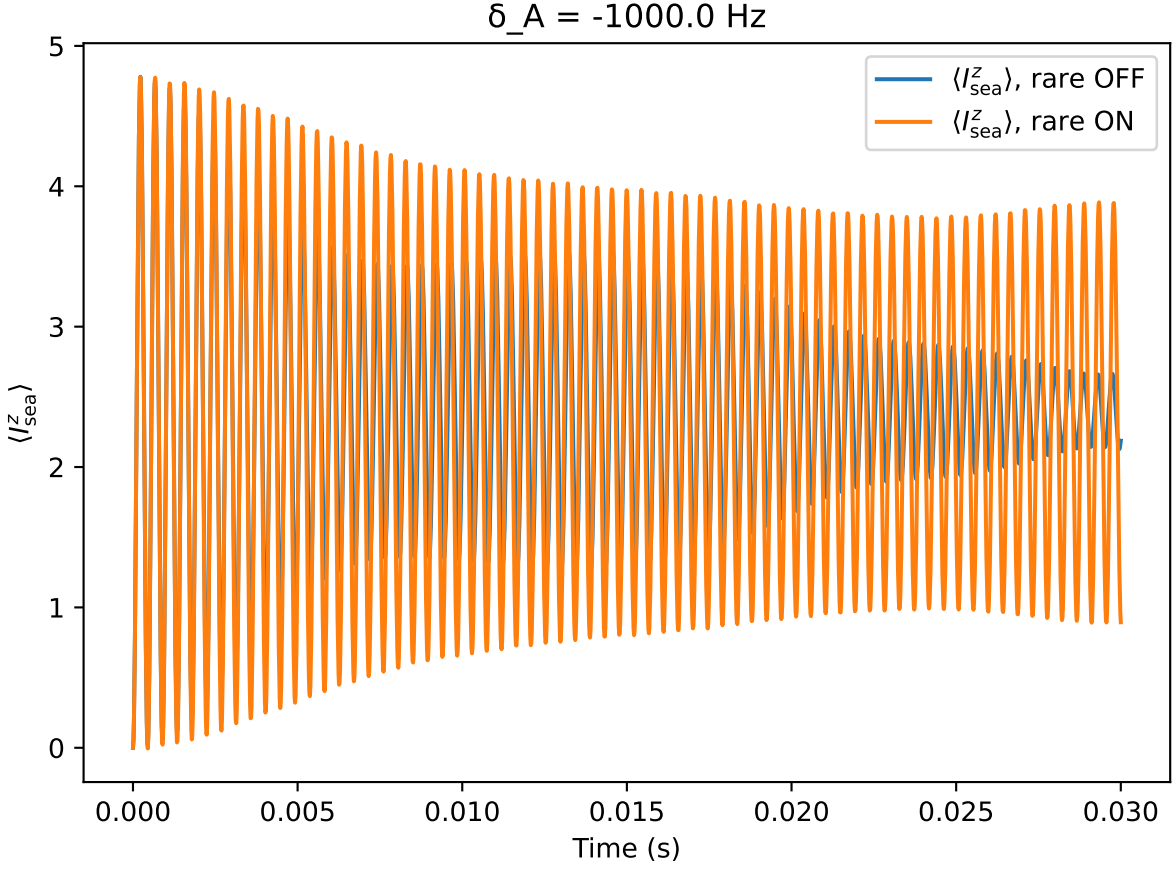
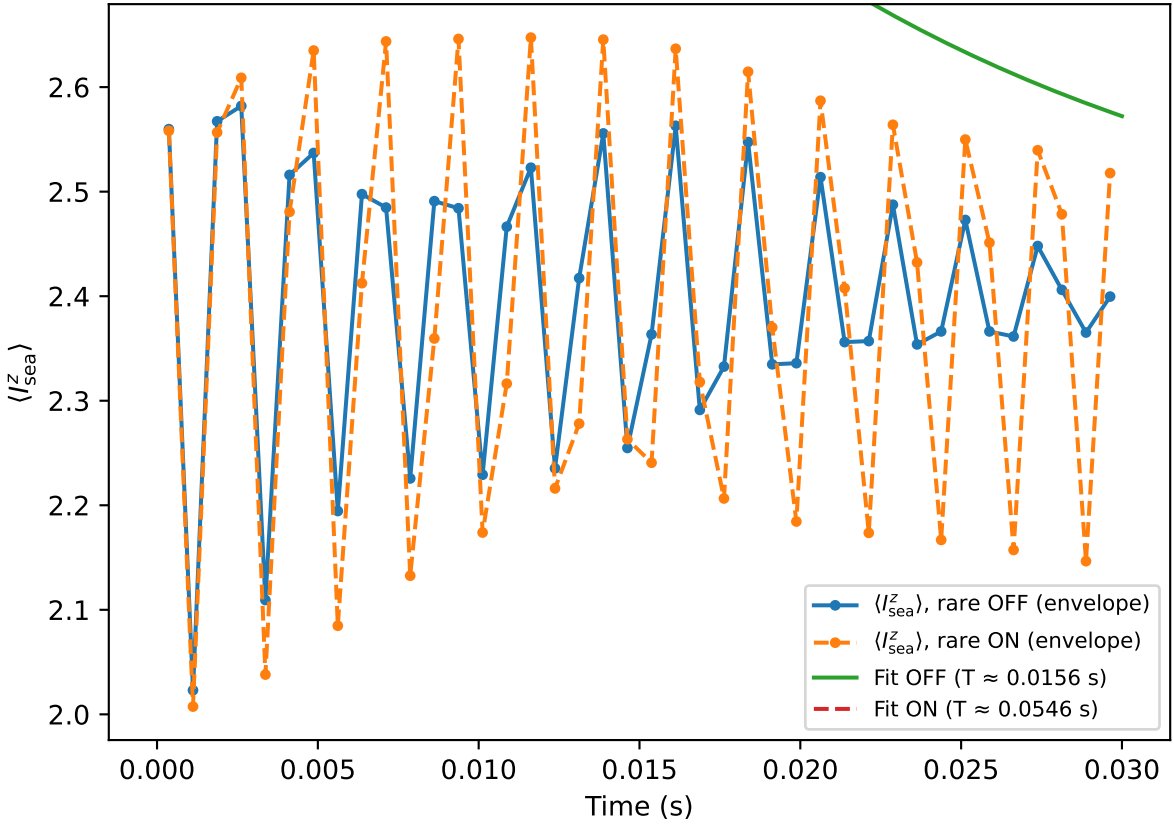
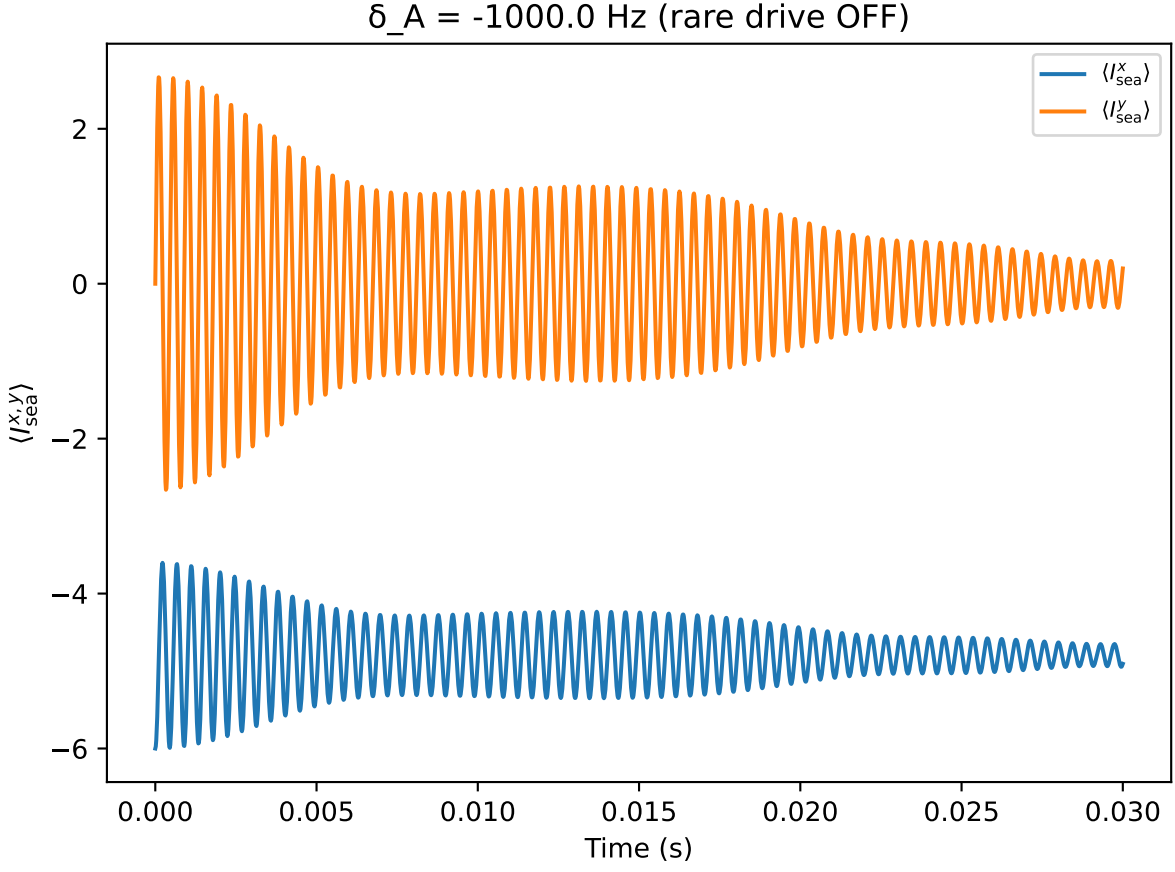
Sea detuning sweep report (Ga sea / Al rare)

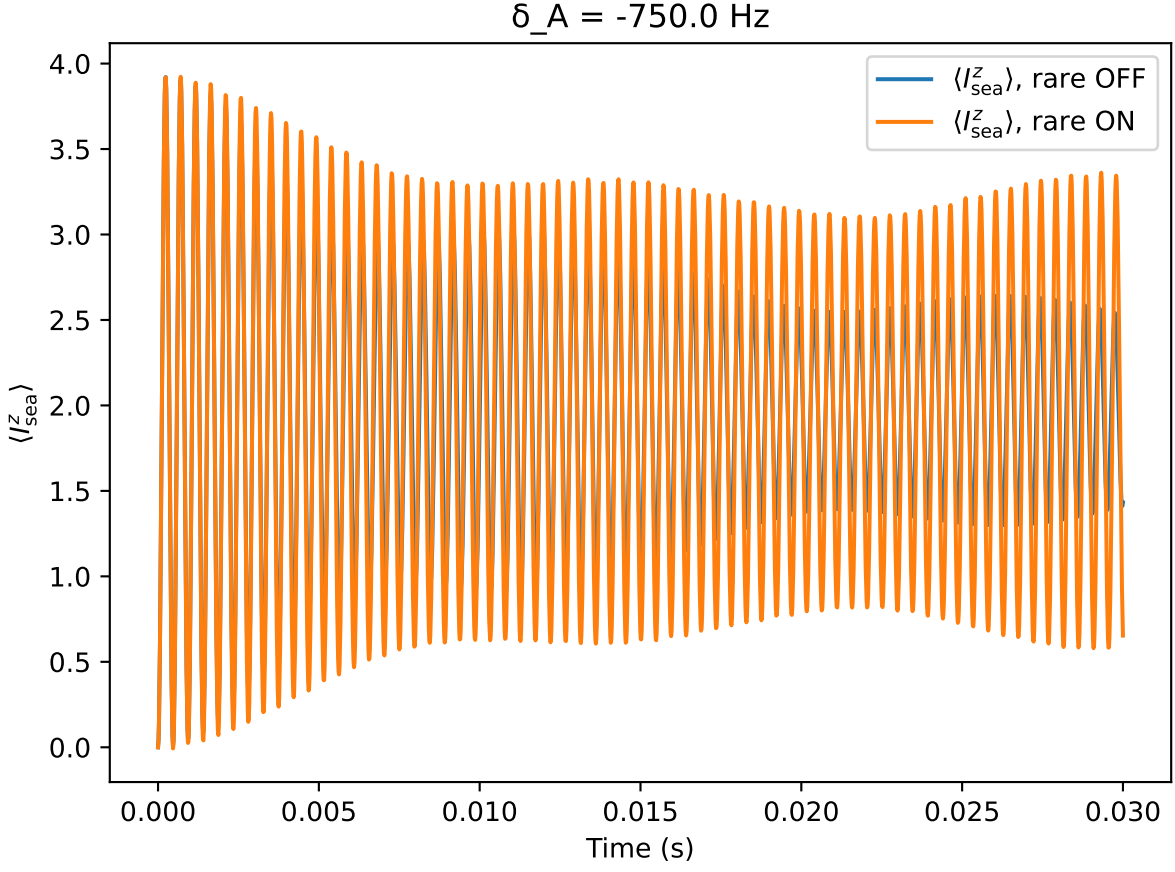
Global parameters (constant across sweep):
  f_Az (sea Larmor)   = 34.062 MHz
  f_Rz (rare Larmor)   = 33.308 MHz
  f1A (sea Rabi)   = 2.000 kHz
  f1R (rare Rabi)   = 1.000 kHz
  gamma_sea   = 7.134e+07 rad·s⁻¹·T⁻¹
  gamma_rare   = 6.976e+07 rad·s⁻¹·T⁻¹
  B0_common   = 3.000 T
  B1_sea   = 1.761e-04 T
  B1_rare   = 9.007e-05 T
  dipolar_scale_SI   = 1.055e-41
  shell_scale   = 0.300 nm
  t_final   = 3.000e-02 s
  steps   = 2000
  n_sea   = 12
  phi_sea   = 0.000 rad
  phi_rare   = 0.000 rad

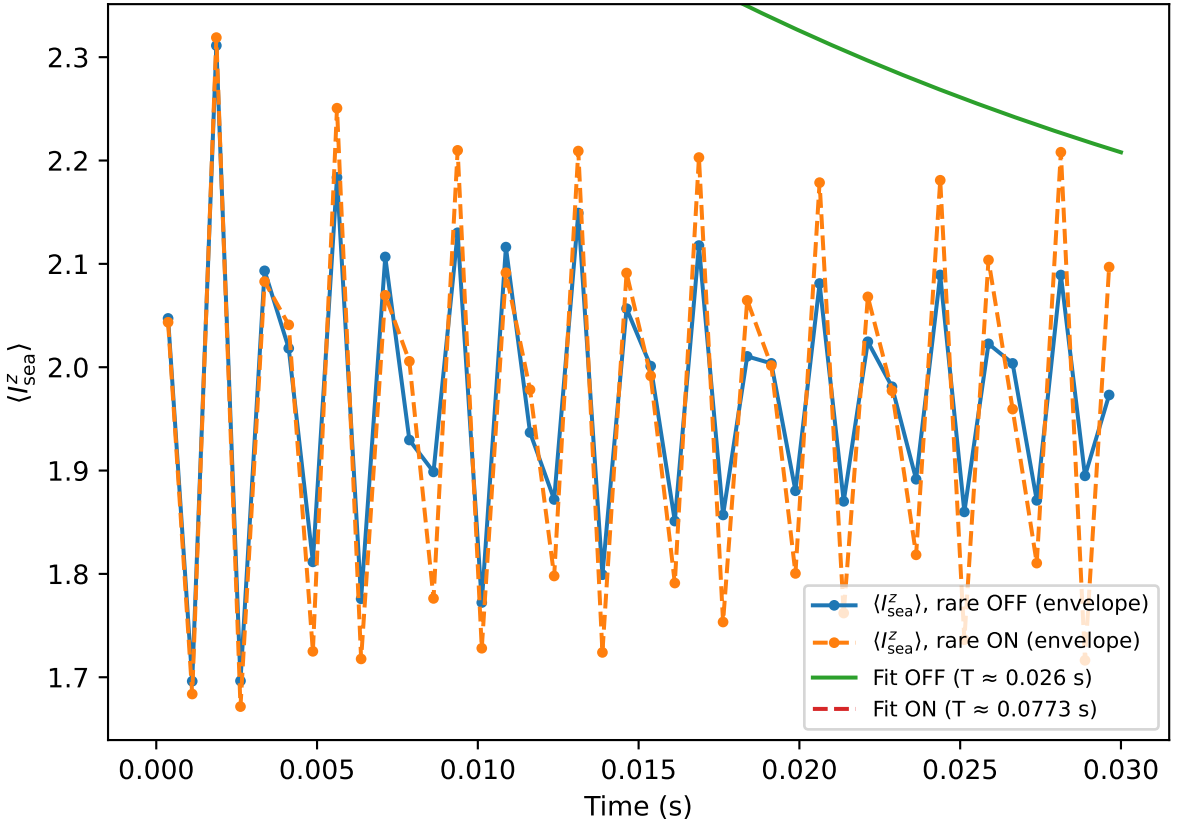
Sea detunings (δ_A = f_Az - f_rf,A) in Hz:
  -1000.0, -750.0, -500.0, -250.0, +0.0, +250.0, +500.0, +750.0, +1000.0

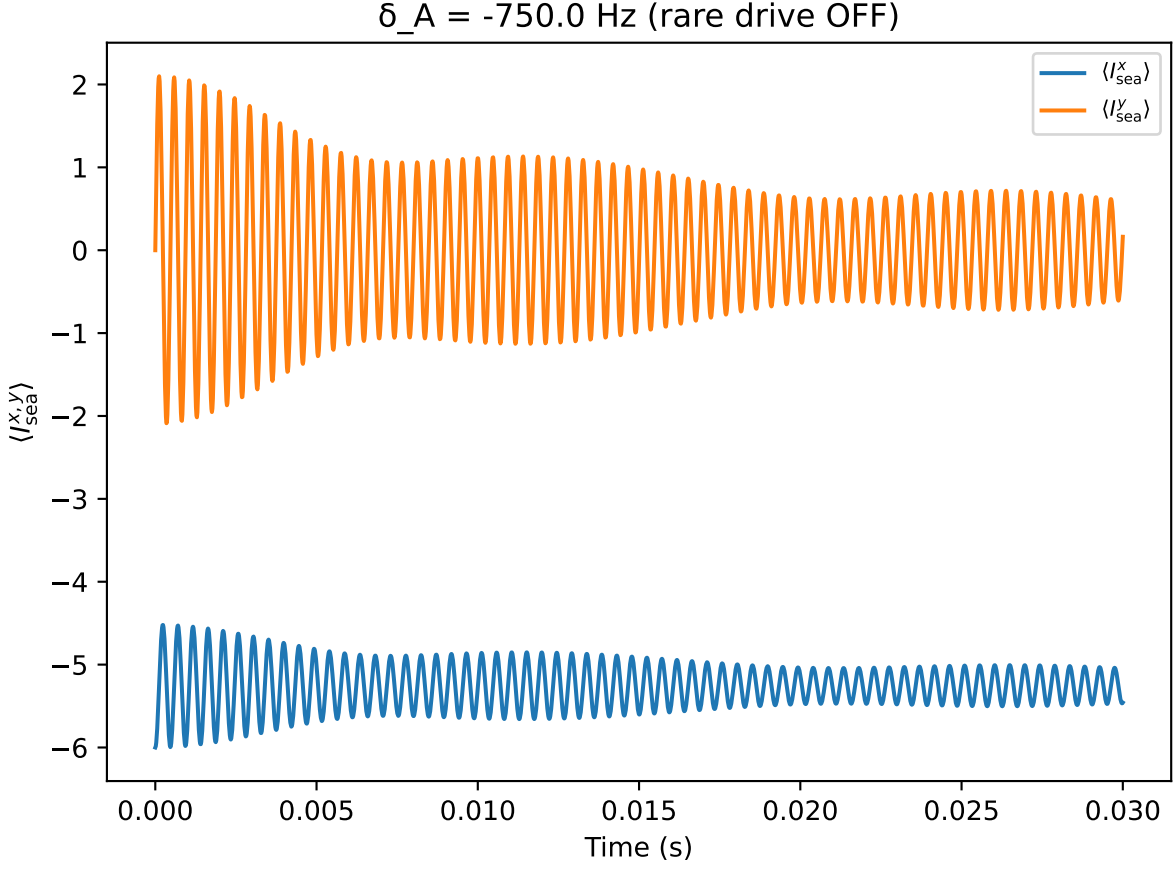

δ_A = -1000.0 Hz
⟨I^z_{sea}⟩, rare OFF
⟨I^z_{sea}⟩, rare ON
⟨I^z_{sea}⟩
Time (s)
0
1
2
3
4
5
0.000
0.005
0.010
0.015
0.020
0.025
0.030

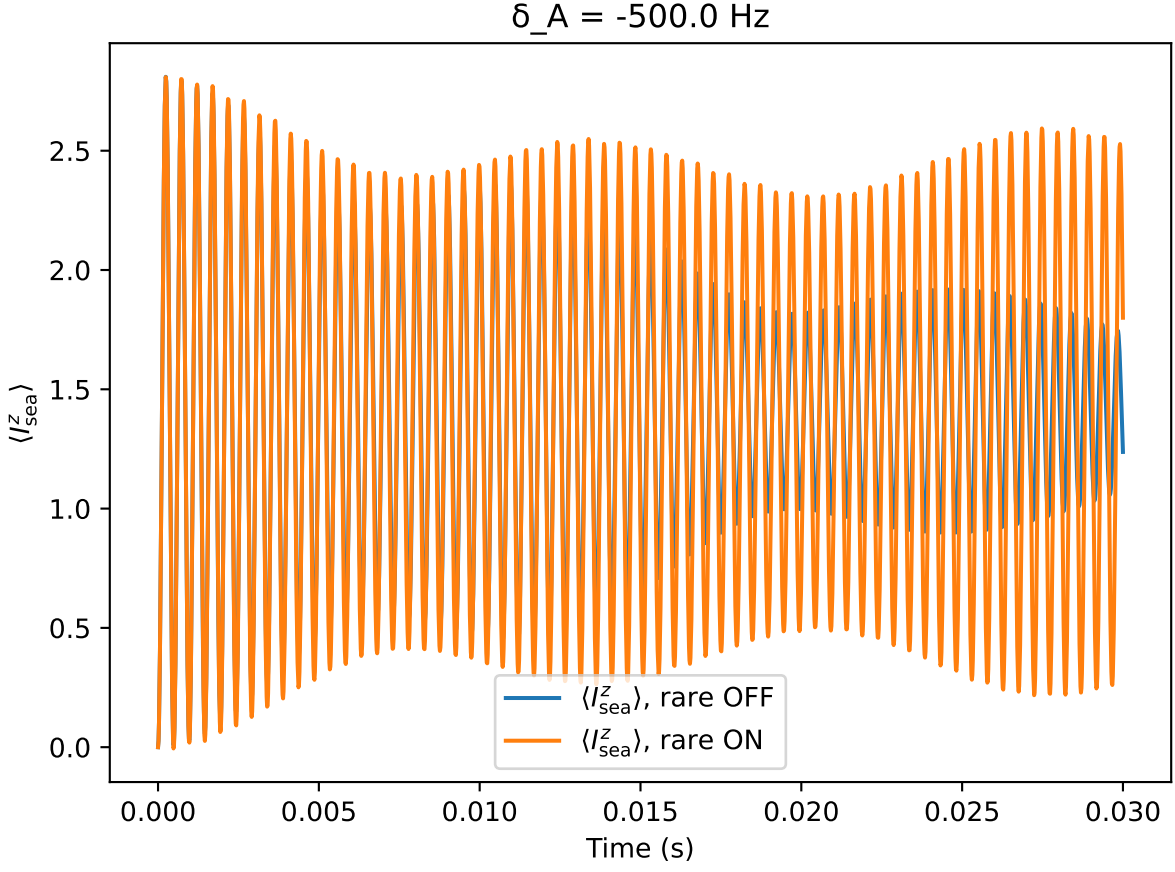

δ_A = -1000.0 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
2.0
2.1
2.2
2.3
2.4
2.5
2.6
0.000
0.005
0.010
0.015
0.020
0.025
0.030
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 0.0156 s)
Fit ON (T ≈ 0.0546 s)

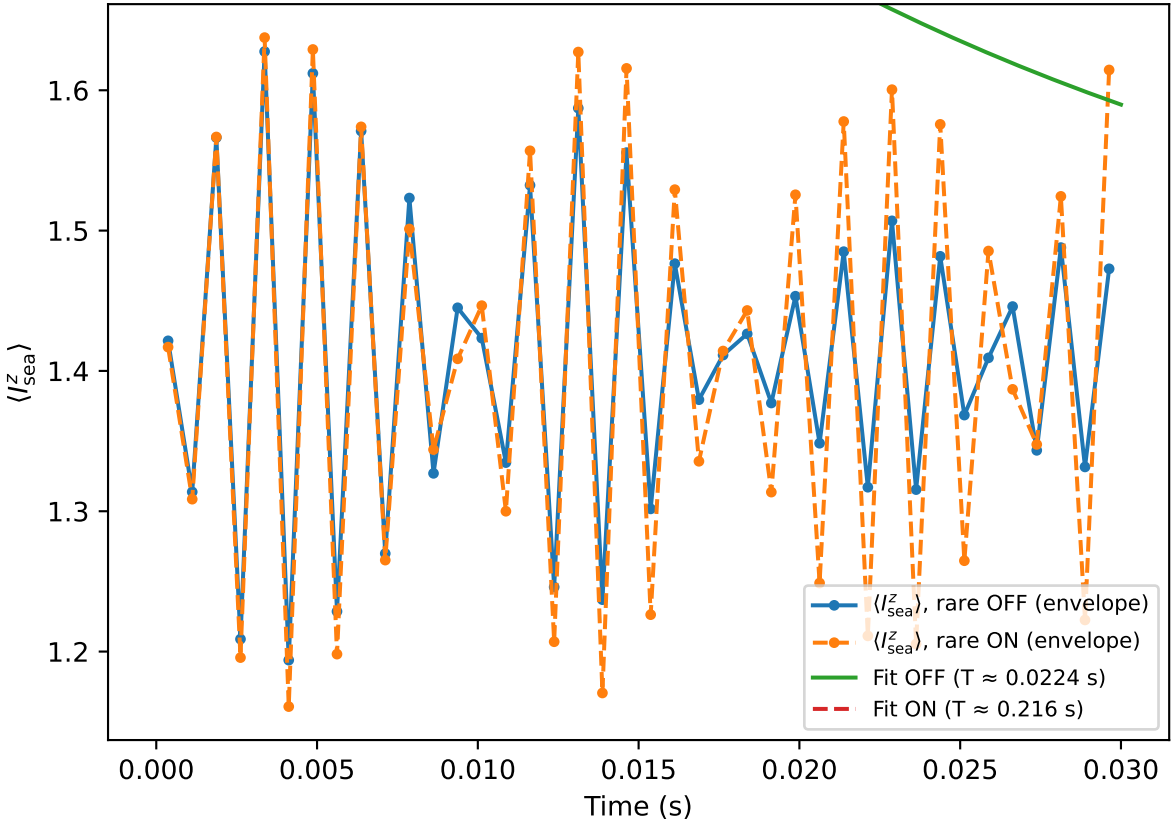

δ_A = -1000.0 Hz (rare drive OFF)
$\langle I^x_{sea} \rangle$
$\langle I^y_{sea} \rangle$
$\langle I^{x,y}_{sea} \rangle$
2
0
−2
−4
−6
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

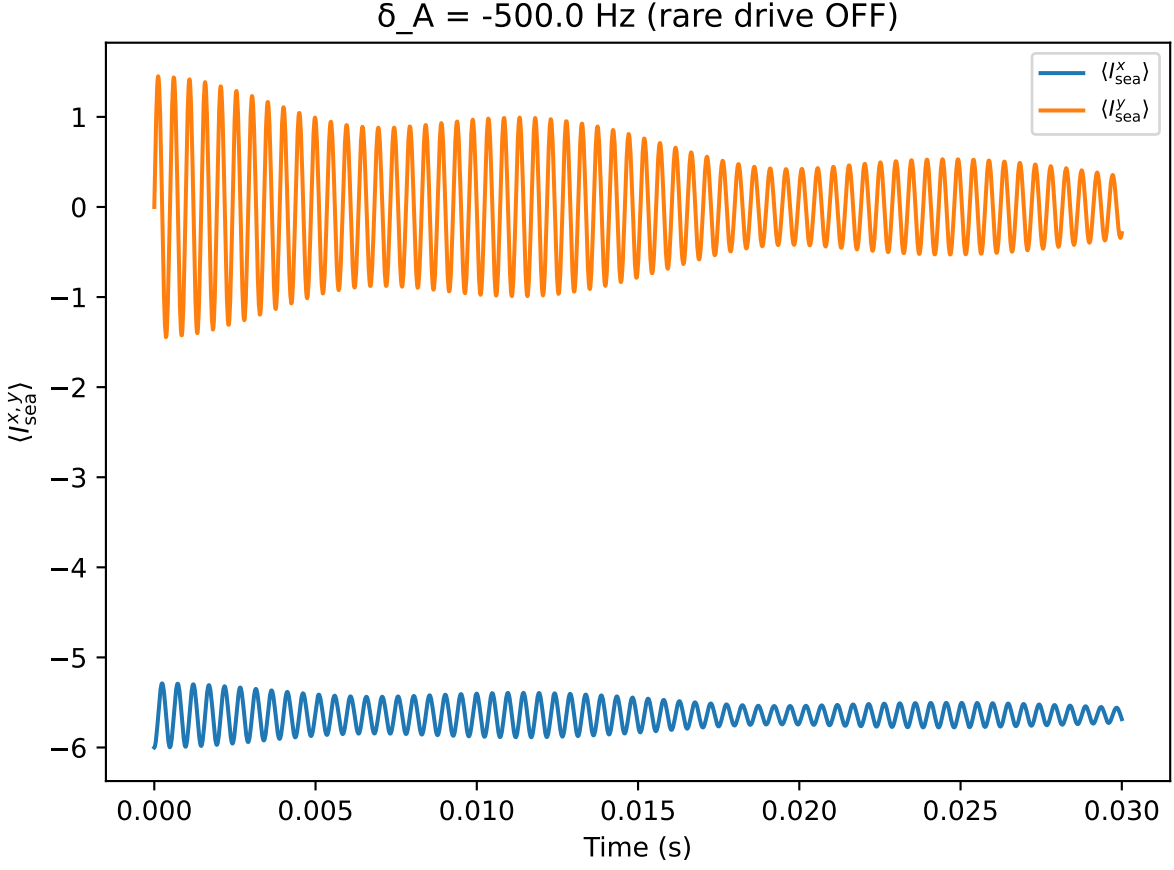

δ_A = -750.0 Hz
⟨I^z_sea⟩, rare OFF
⟨I^z_sea⟩, rare ON
⟨I^z_sea⟩
Time (s)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
0.000
0.005
0.010
0.015
0.020
0.025
0.030

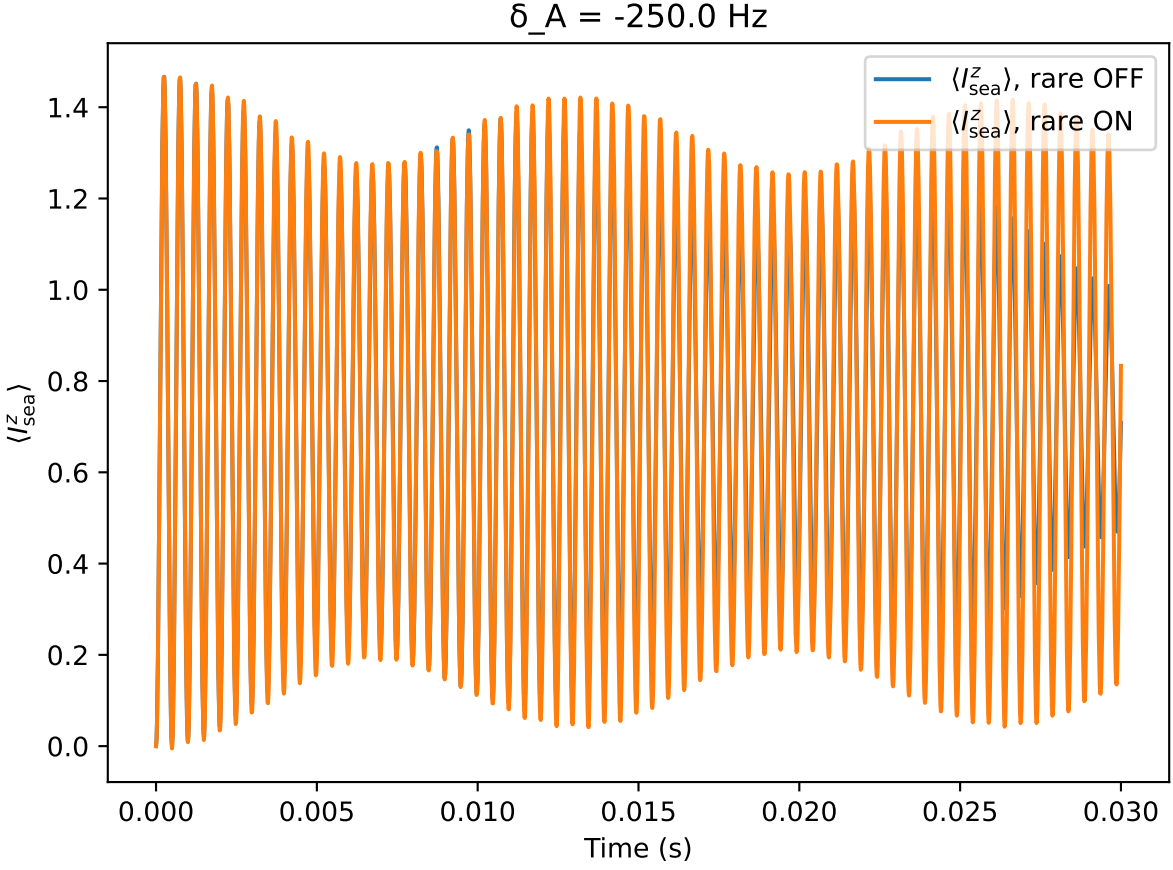

δ_A = -750.0 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
2.3
2.2
2.1
2.0
1.9
1.8
1.7
0.000
0.005
0.010
0.015
0.020
0.025
0.030
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 0.026 s)
Fit ON (T ≈ 0.0773 s)

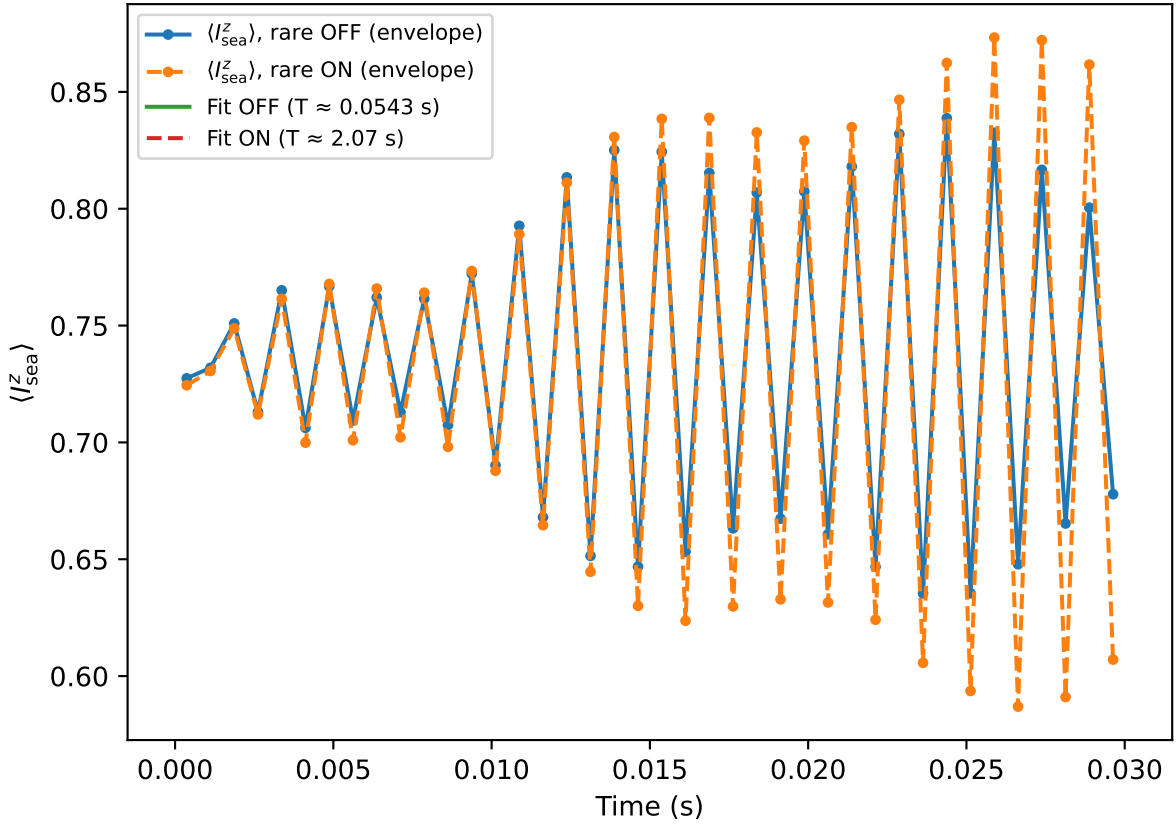

δ_A = -750.0 Hz (rare drive OFF)
$\langle I^x_{sea} \rangle$
$\langle I^y_{sea} \rangle$
$\langle I^{x,y}_{sea} \rangle$
2
1
0
−1
−2
−3
−4
−5
−6
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

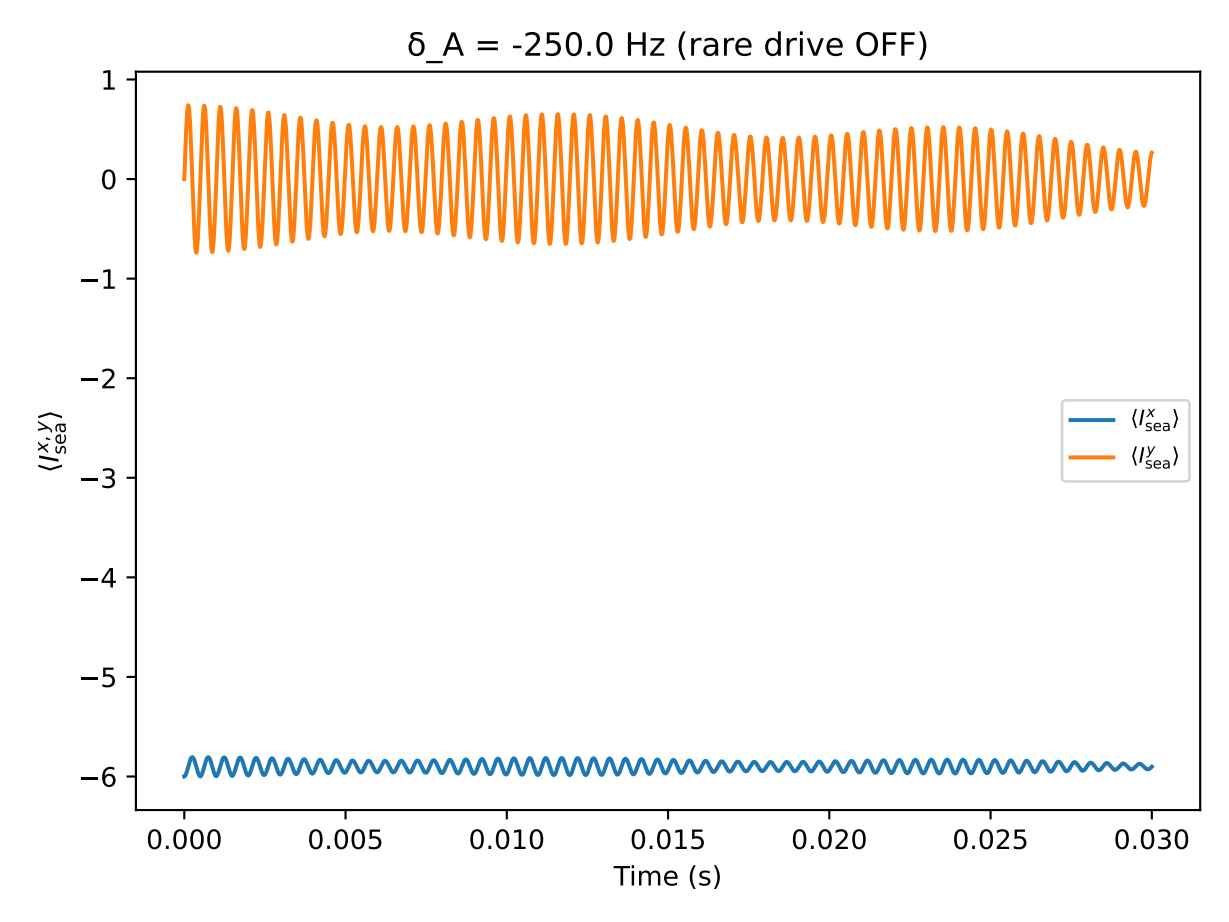

δ_A = -500.0 Hz
2.5
2.0
1.5
1.0
0.5
0.0
$\langle I^z_{sea} \rangle$
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF
$\langle I^z_{sea} \rangle$, rare ON

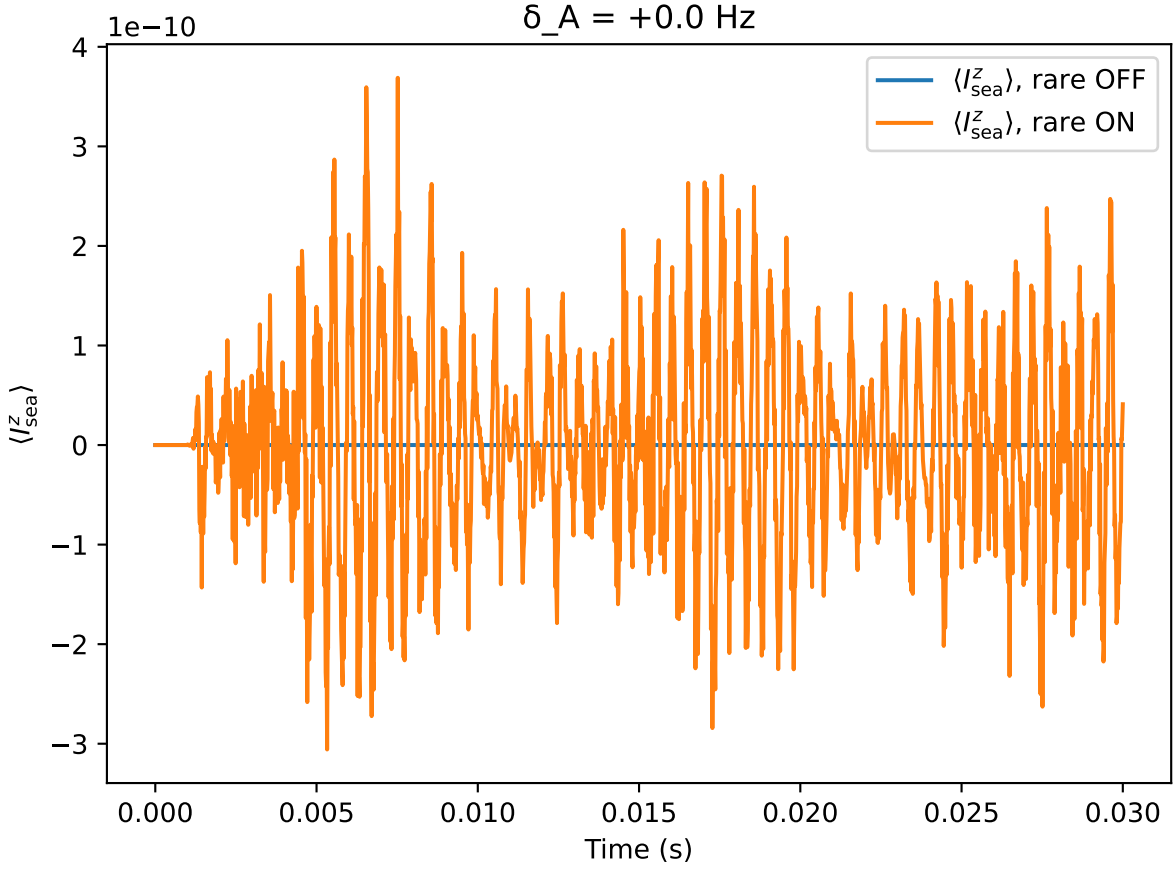

δ_A = -500.0 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
1.6
1.5
1.4
1.3
1.2
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 0.0224 s)
Fit ON (T ≈ 0.216 s)

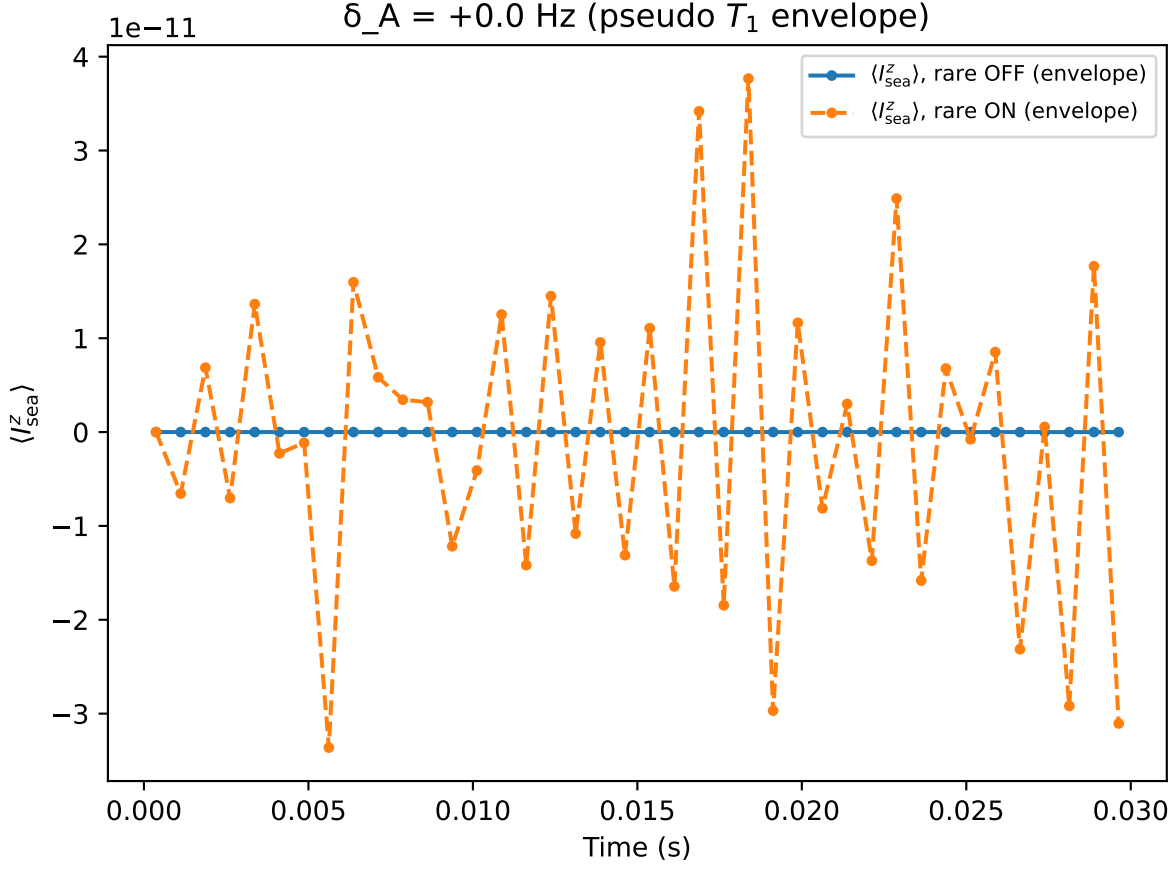

δ_A = -500.0 Hz (rare drive OFF)
$\langle I^x_{sea} \rangle$
$\langle I^y_{sea} \rangle$
$\langle I^{x,y}_{sea} \rangle$
1
0
−1
−2
−3
−4
−5
−6
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

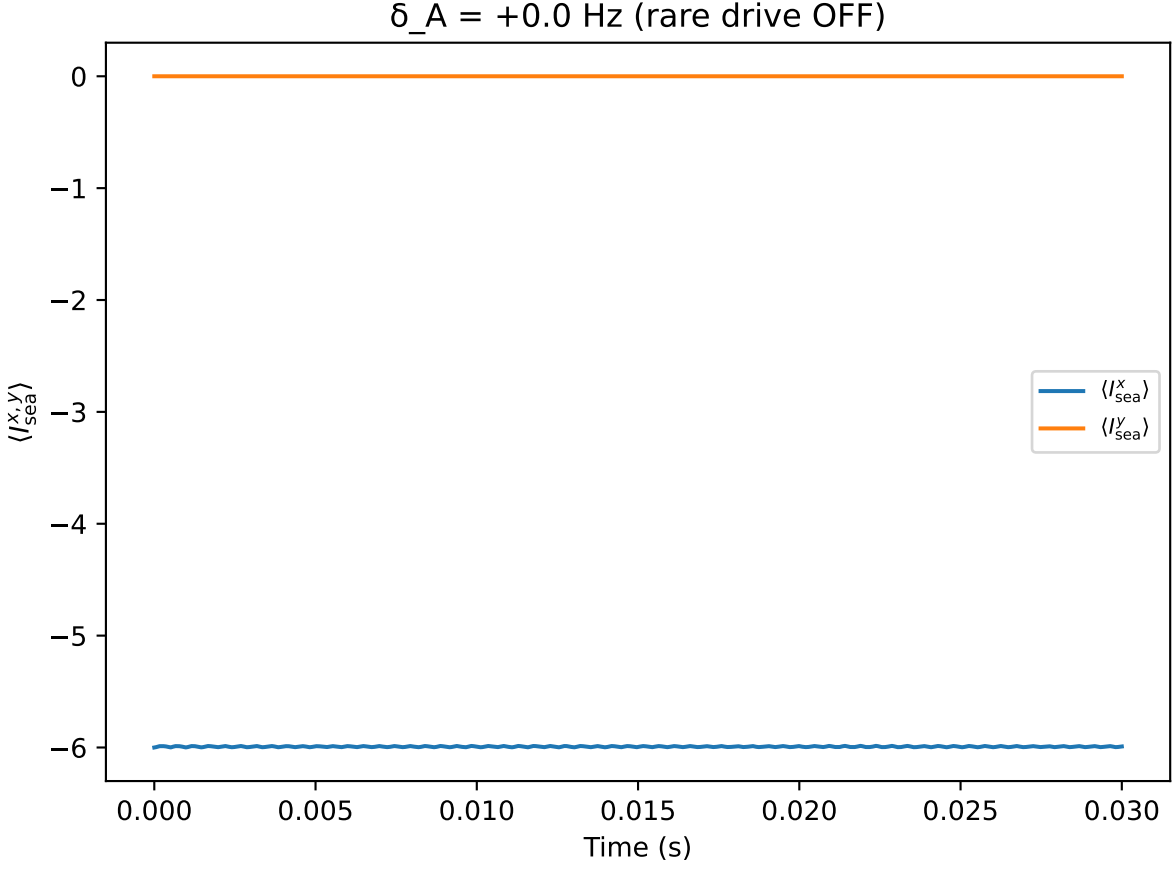

δ_A = -250.0 Hz
⟨I^z_sea⟩, rare OFF
⟨I^z_sea⟩, rare ON
⟨I^z_sea⟩
Time (s)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
0.000
0.005
0.010
0.015
0.020
0.025
0.030

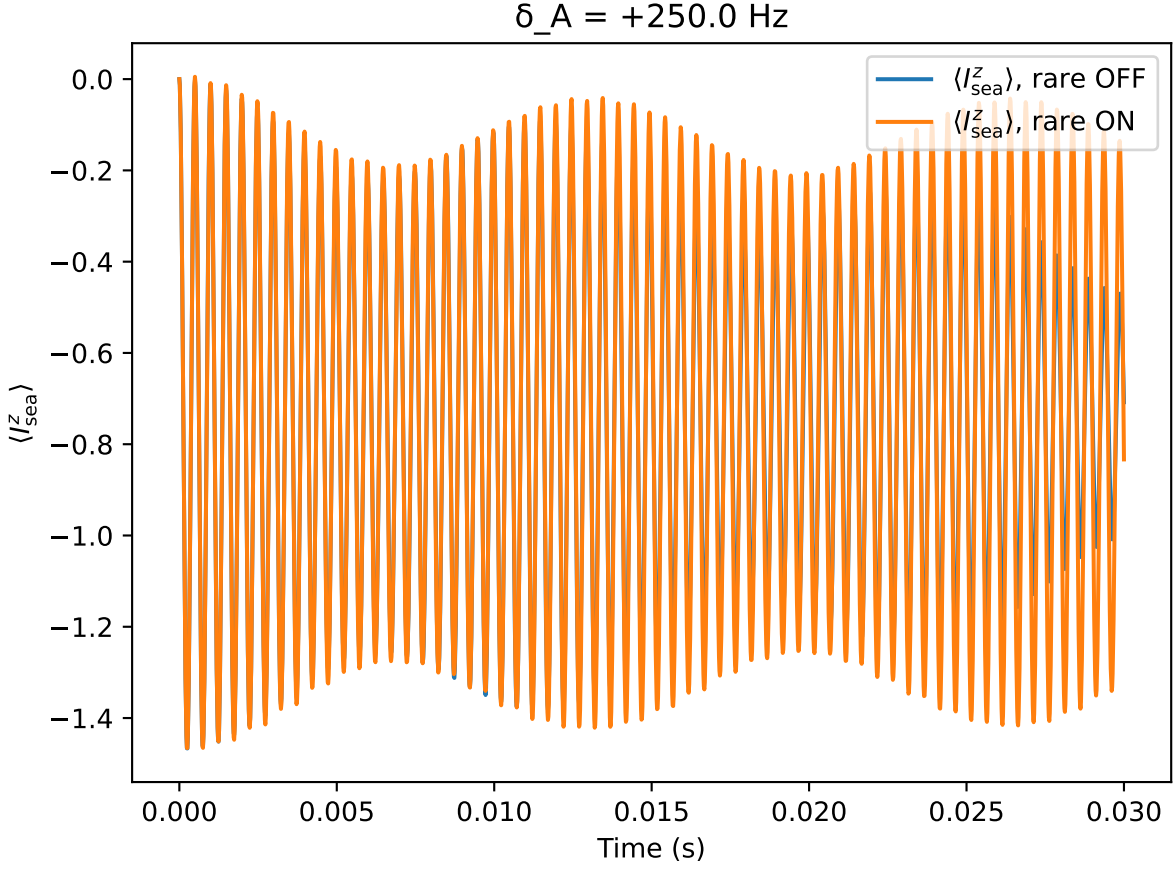

δ_A = -250.0 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 0.0543 s)
Fit ON (T ≈ 2.07 s)
$\langle I^z_{sea} \rangle$
0.85
0.80
0.75
0.70
0.65
0.60
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

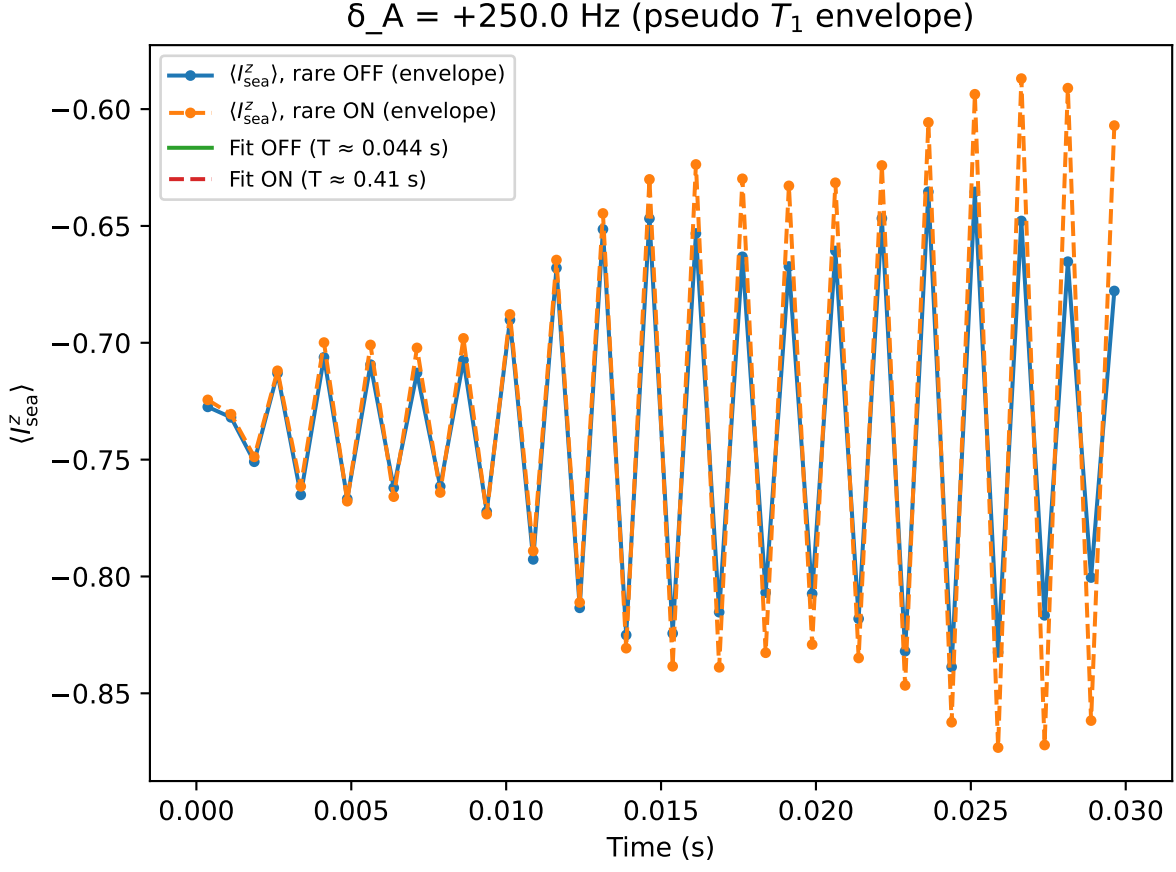

δ_A = -250.0 Hz (rare drive OFF)
1
0
−1
−2
−3
−4
−5
−6
$\langle I^{x,y}_{\mathrm{sea}} \rangle$
$\langle I^{x}_{\mathrm{sea}} \rangle$
$\langle I^{y}_{\mathrm{sea}} \rangle$
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

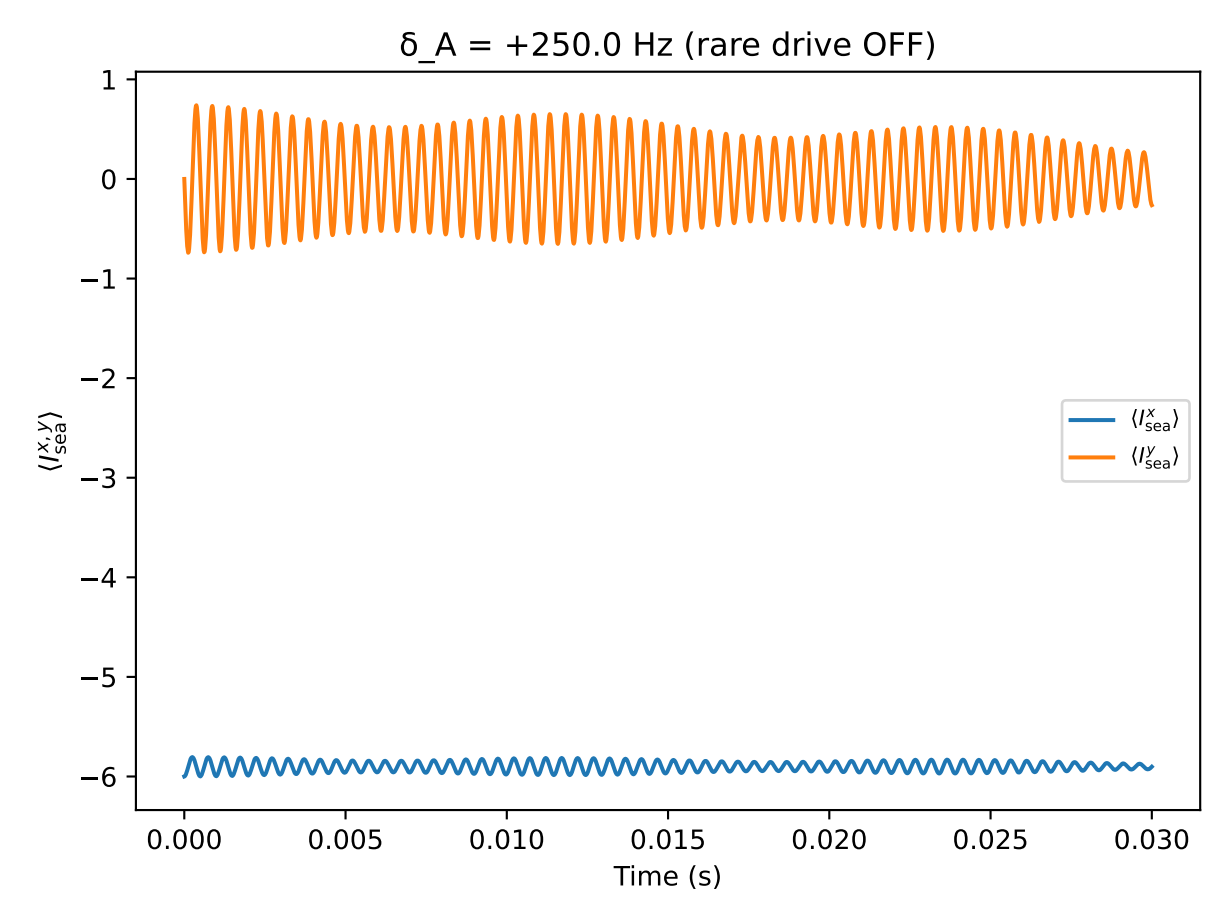

δ_A = +0.0 Hz
1e−10
4
3
2
1
0
−1
−2
−3
⟨I^z_sea⟩
⟨I^z_sea⟩, rare OFF
⟨I^z_sea⟩, rare ON
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

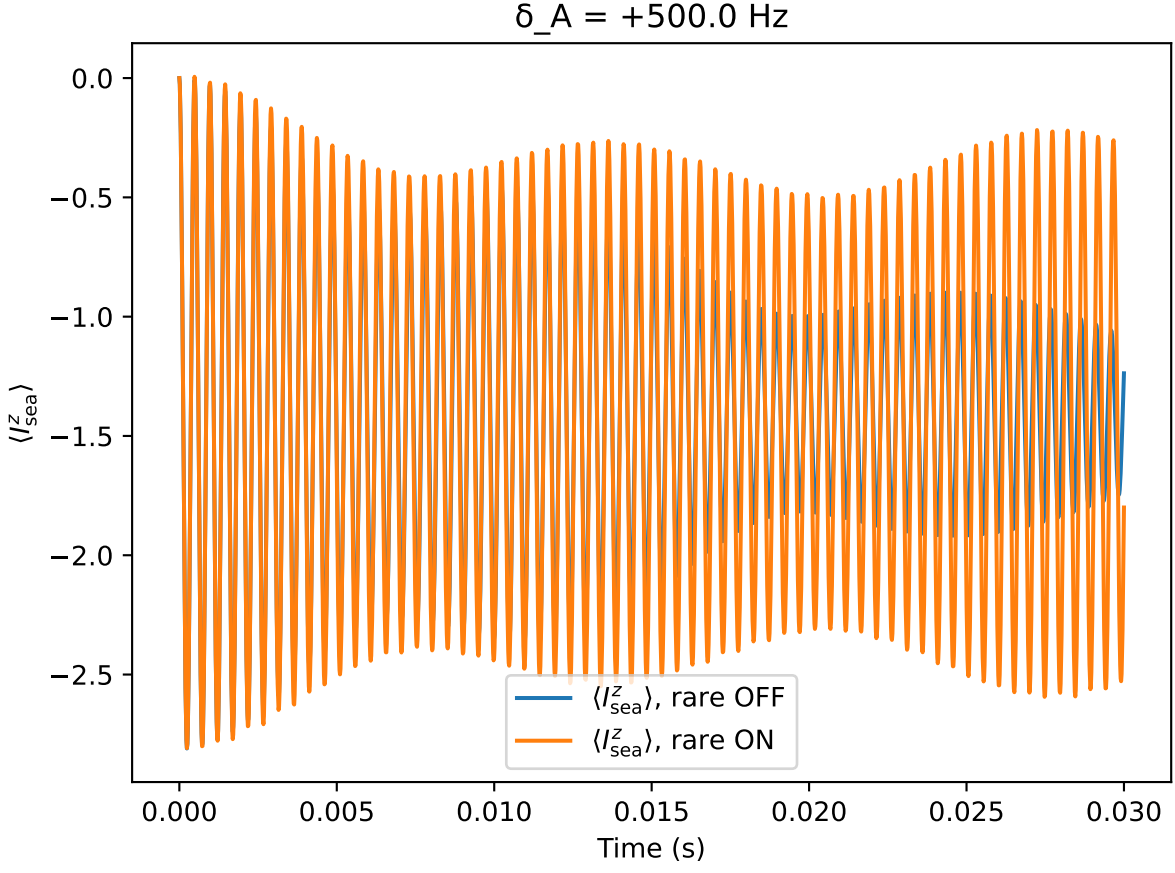

δ_A = +0.0 Hz (pseudo T_1 envelope)
1e−11
4
3
2
1
0
−1
−2
−3
$\langle I^z_{sea} \rangle$
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

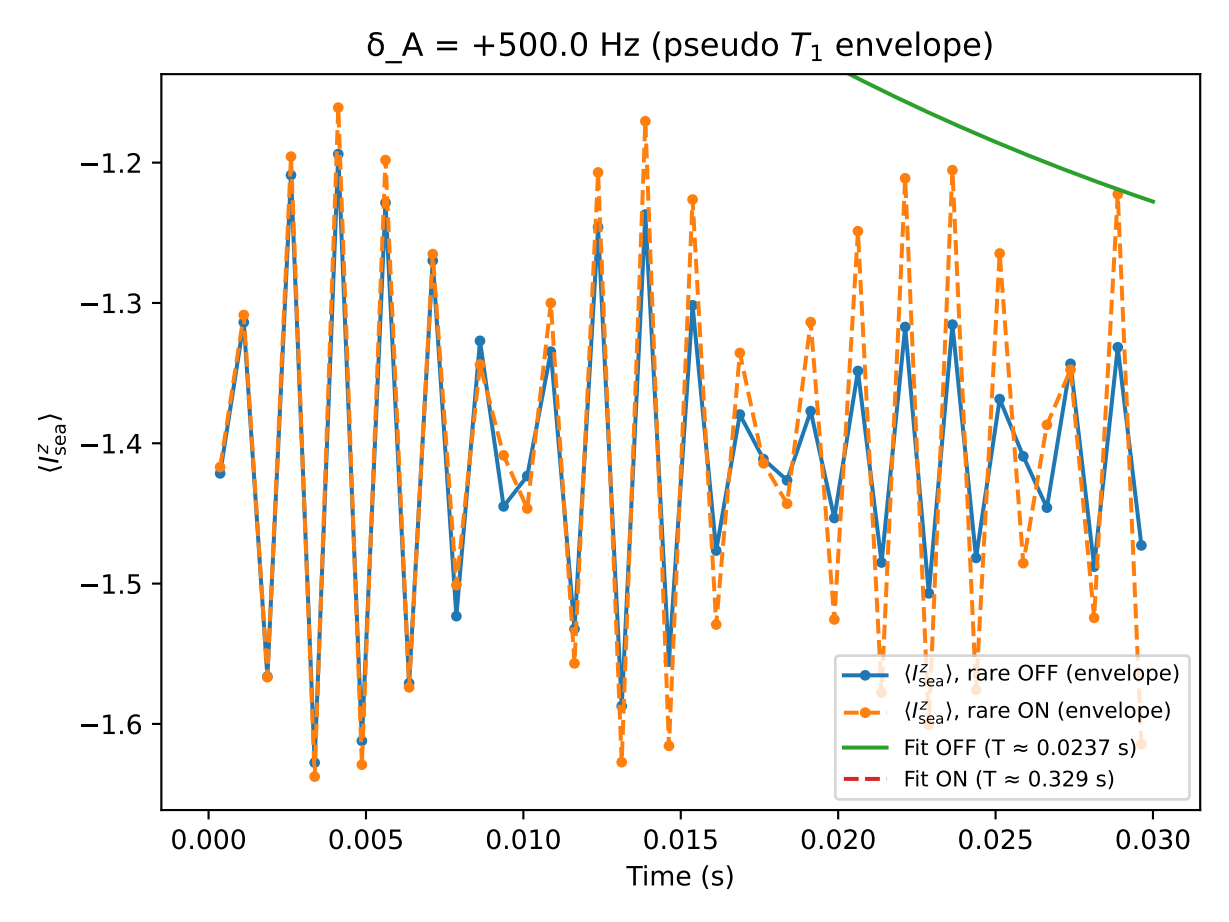

δ_A = +0.0 Hz (rare drive OFF)
0
−1
−2
−3
−4
−5
−6
⟨I^{x,y}_sea⟩
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)
⟨I^x_sea⟩
⟨I^y_sea⟩

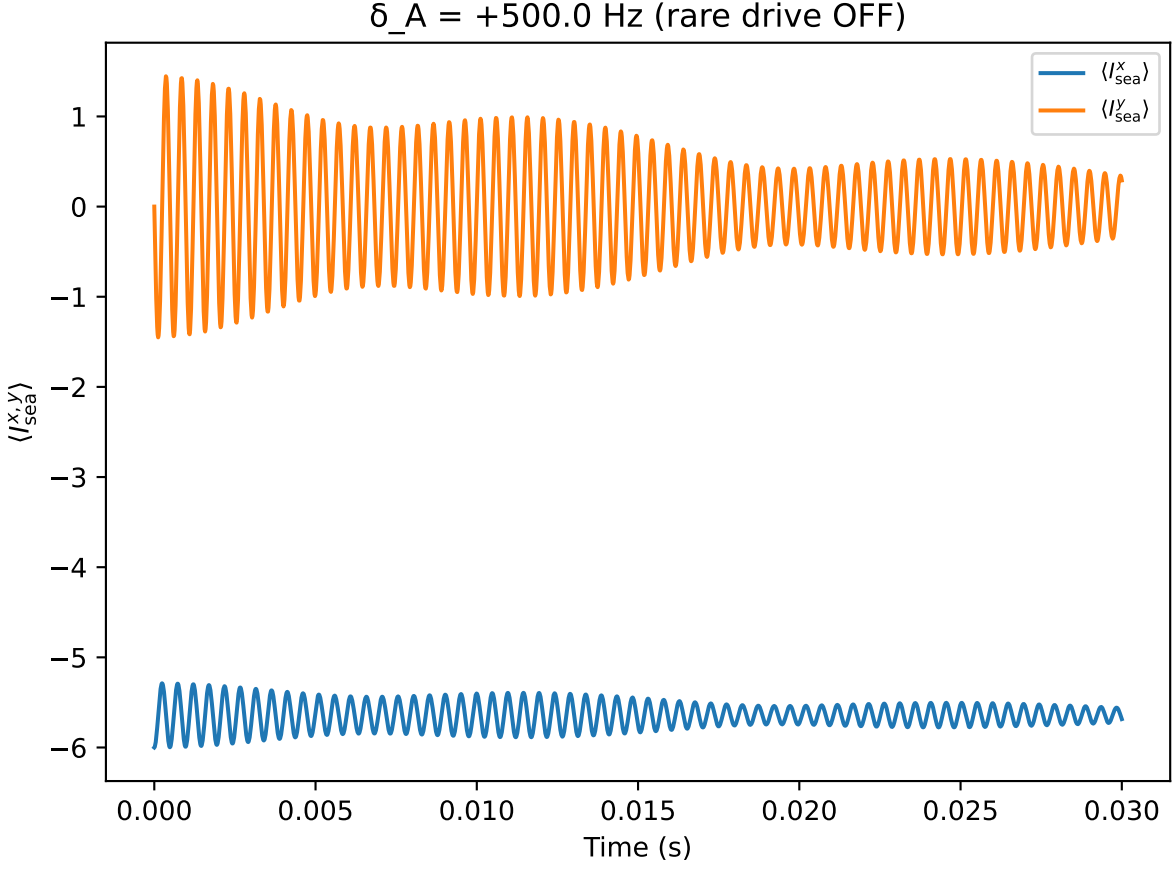

δ_A = +250.0 Hz
⟨I^z_{sea}⟩, rare OFF
⟨I^z_{sea}⟩, rare ON
⟨I^z_{sea}⟩
0.0
−0.2
−0.4
−0.6
−0.8
−1.0
−1.2
−1.4
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

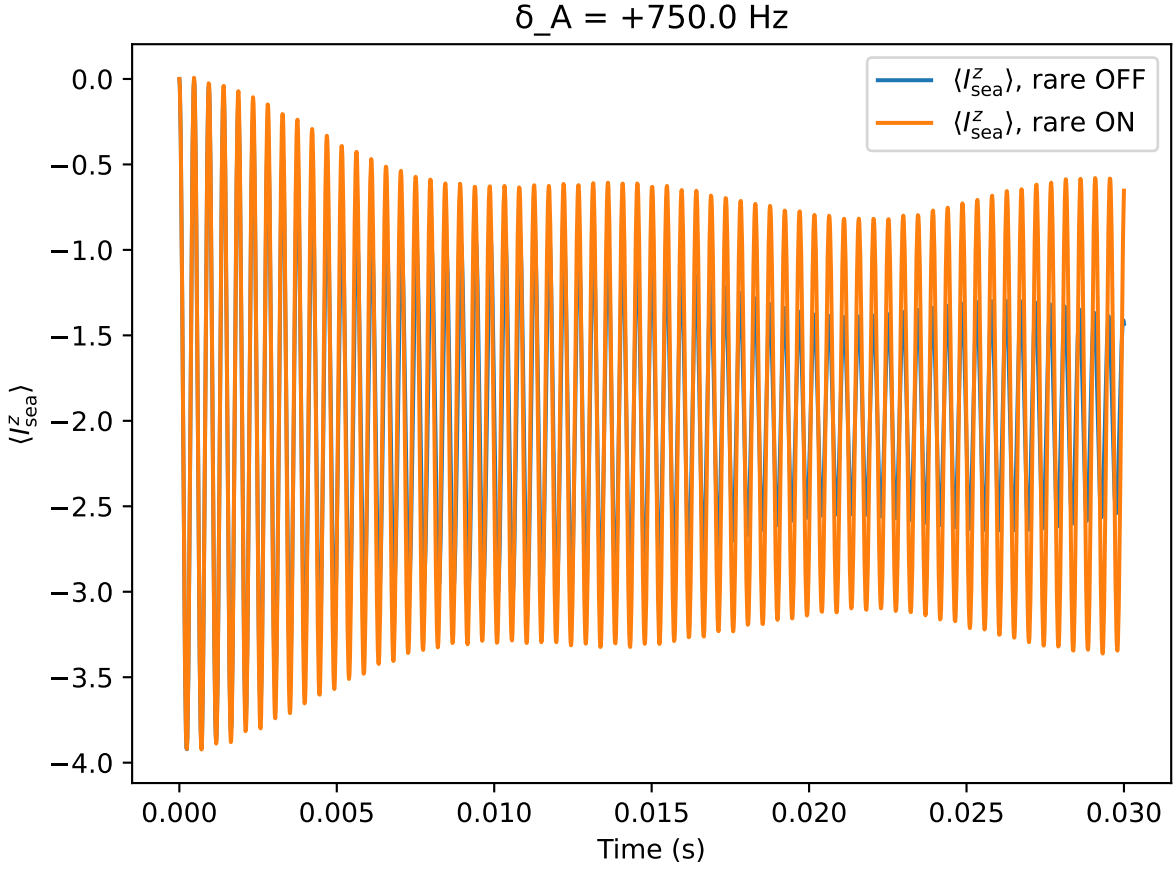

δ_A = +250.0 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 0.044 s)
Fit ON (T ≈ 0.41 s)
−0.60
−0.65
−0.70
−0.75
−0.80
−0.85
$\langle I^z_{sea} \rangle$
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

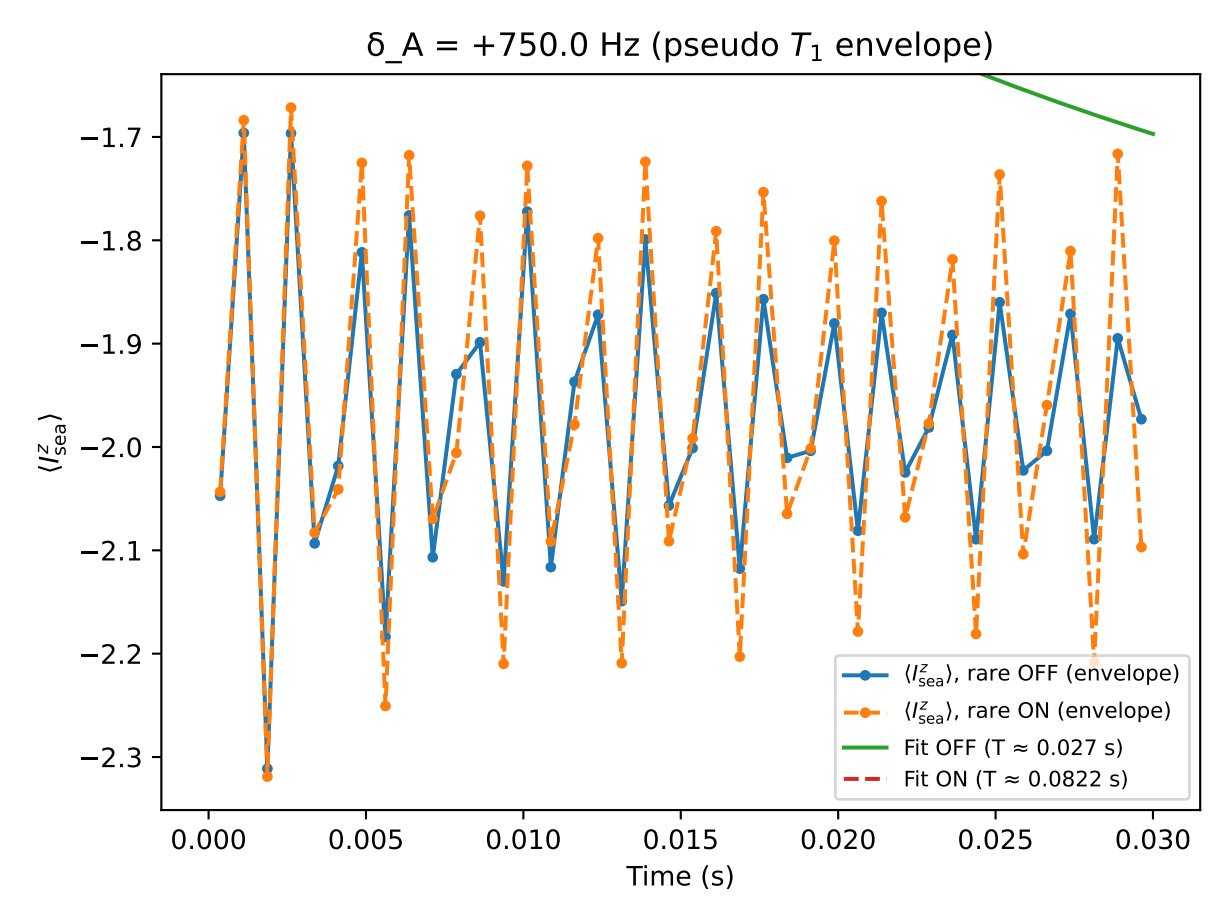

δ_A = +250.0 Hz (rare drive OFF)
1
0
−1
−2
−3
−4
−5
−6
⟨I^{x,y}_sea⟩
⟨I^x_sea⟩
⟨I^y_sea⟩
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

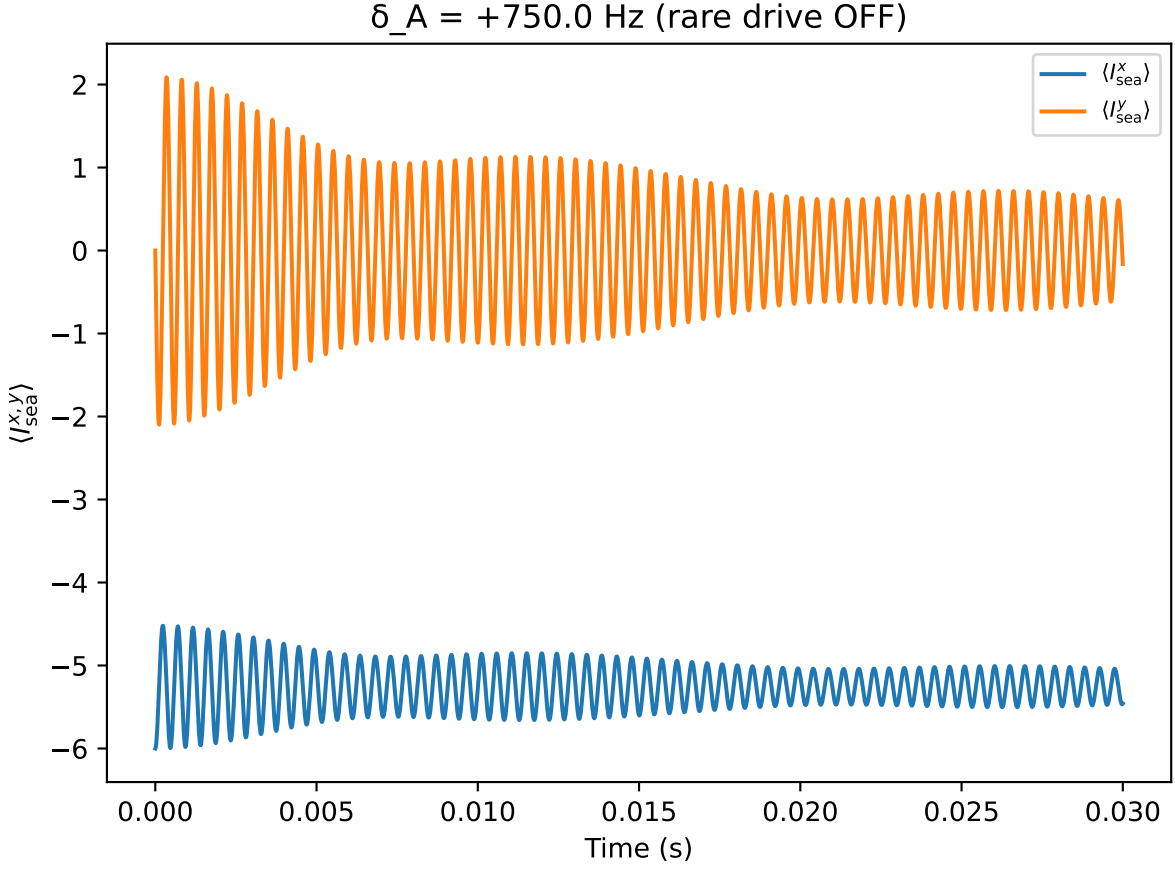

δ_A = +500.0 Hz
0.0
−0.5
−1.0
−1.5
−2.0
−2.5
$\langle I^z_{sea} \rangle$
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF
$\langle I^z_{sea} \rangle$, rare ON

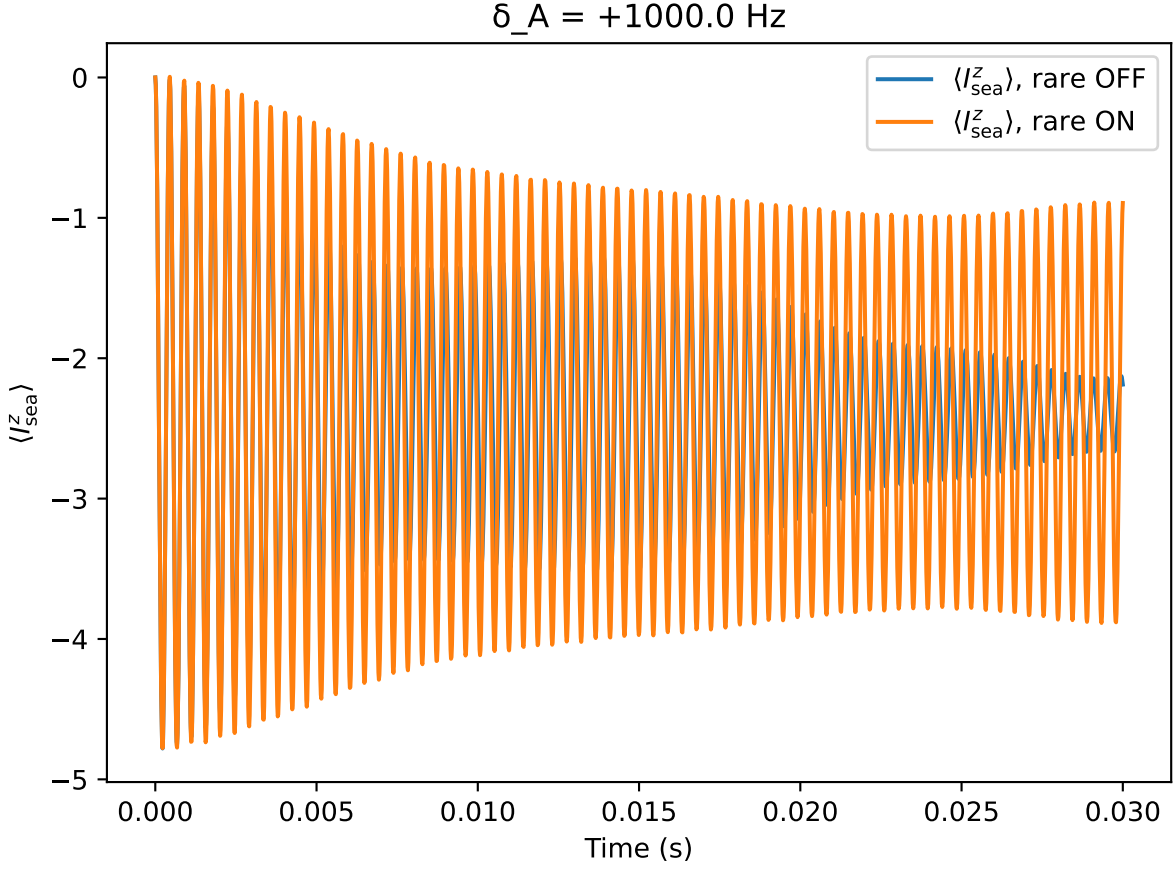

δ_A = +500.0 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
−1.2
−1.3
−1.4
−1.5
−1.6
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 0.0237 s)
Fit ON (T ≈ 0.329 s)

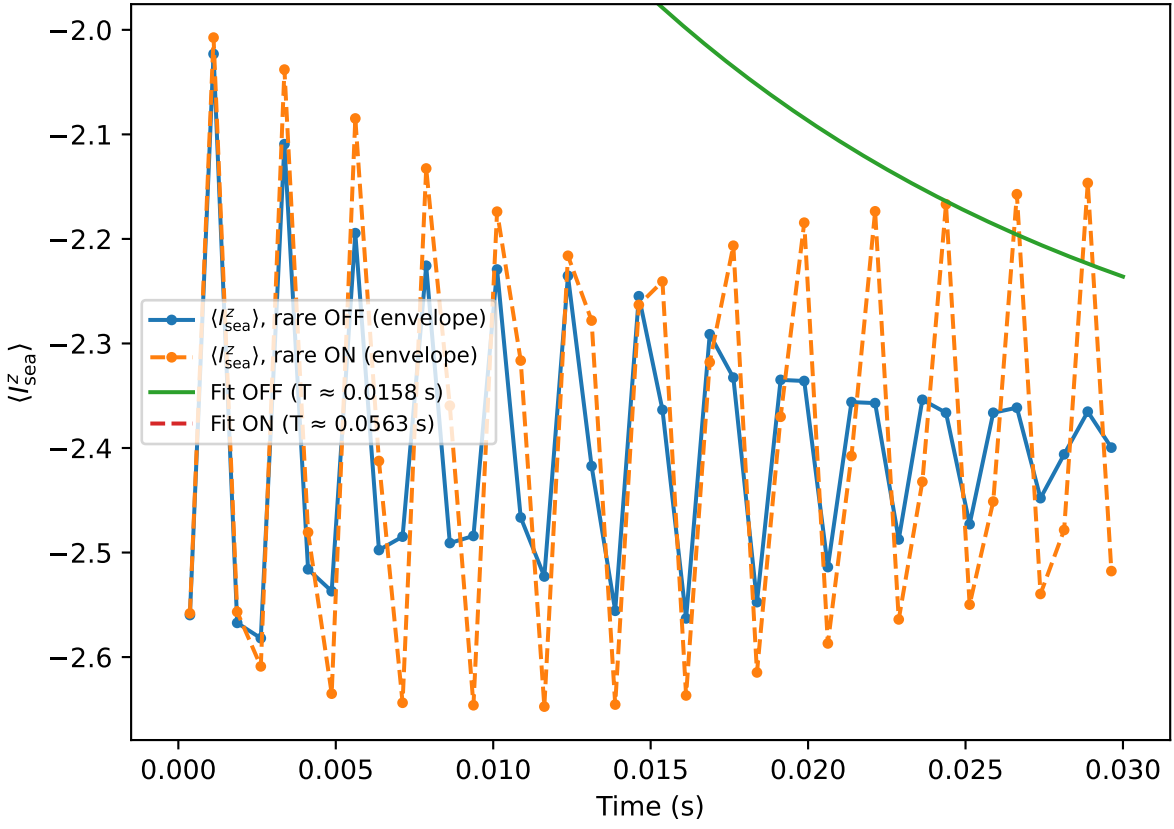

δ_A = +500.0 Hz (rare drive OFF)
⟨I^x_sea⟩
⟨I^y_sea⟩
⟨I^{x,y}_sea⟩
1
0
−1
−2
−3
−4
−5
−6
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

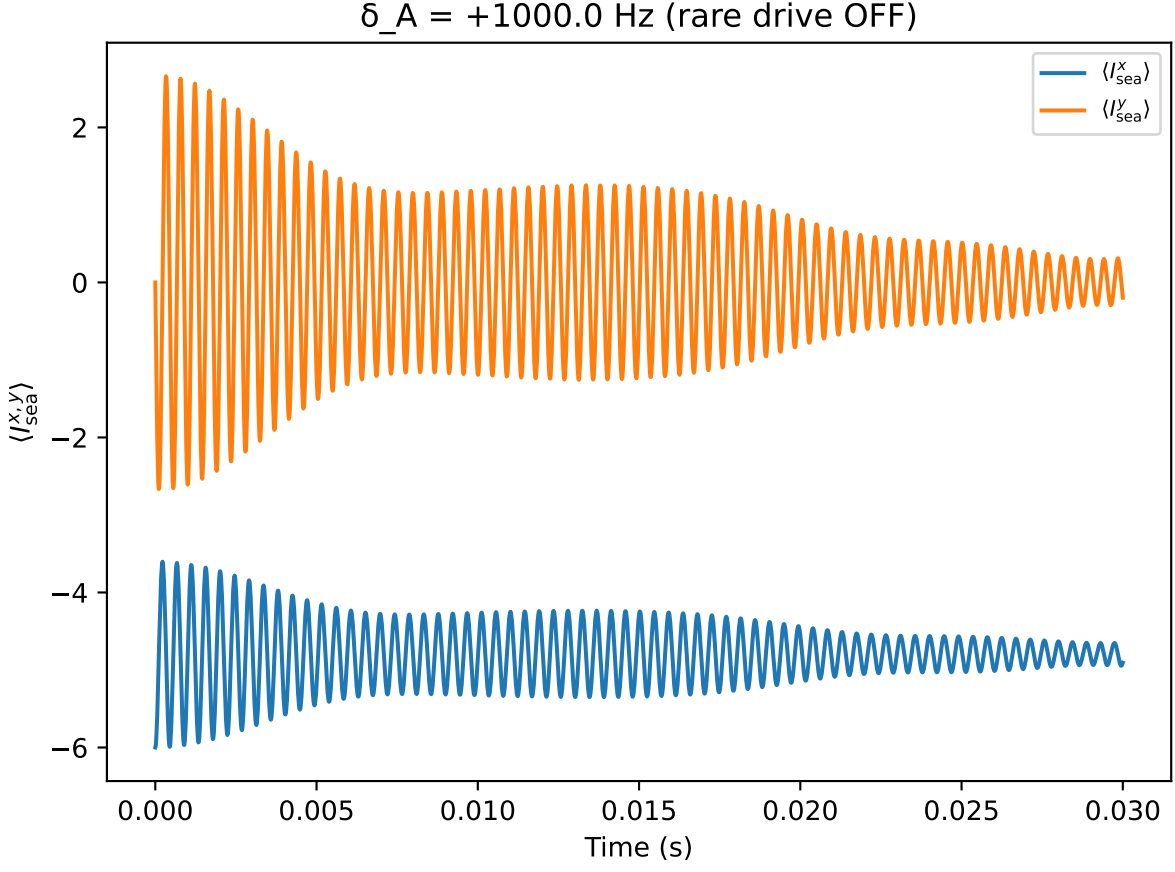

δ_A = +750.0 Hz
⟨I^z_sea⟩, rare OFF
⟨I^z_sea⟩, rare ON
0.0
−0.5
−1.0
−1.5
−2.0
−2.5
−3.0
−3.5
−4.0
⟨I^z_sea⟩
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)


δ_A = +750.0 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
−1.7
−1.8
−1.9
−2.0
−2.1
−2.2
−2.3
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 0.027 s)
Fit ON (T ≈ 0.0822 s)


δ_A = +750.0 Hz (rare drive OFF)
$\langle I^x_{sea} \rangle$
$\langle I^y_{sea} \rangle$
$\langle I^{x,y}_{sea} \rangle$
2
1
0
−1
−2
−3
−4
−5
−6
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)


δ_A = +1000.0 Hz
⟨I^z_{sea}⟩, rare OFF
⟨I^z_{sea}⟩, rare ON
⟨I^z_{sea}⟩
0
−1
−2
−3
−4
−5
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)


δ_A = +1000.0 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
−2.0
−2.1
−2.2
−2.3
−2.4
−2.5
−2.6
0.000
0.005
0.010
0.015
0.020
0.025
0.030
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 0.0158 s)
Fit ON (T ≈ 0.0563 s)


δ_A = +1000.0 Hz (rare drive OFF)
⟨I^x_sea⟩
⟨I^y_sea⟩
⟨I^{x,y}_sea⟩
2
0
−2
−4
−6
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

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

delta_Hz	T_Iz_sea_off	T_Iz_sea_on
-1000.0	0.0156	0.0546
-750.0	0.026	0.0773
-500.0	0.0224	0.216
-250.0	0.0543	2.07
+0.0	NA	NA
+250.0	0.044	0.41
+500.0	0.0237	0.329
+750.0	0.027	0.0822
+1000.0	0.0158	0.0563