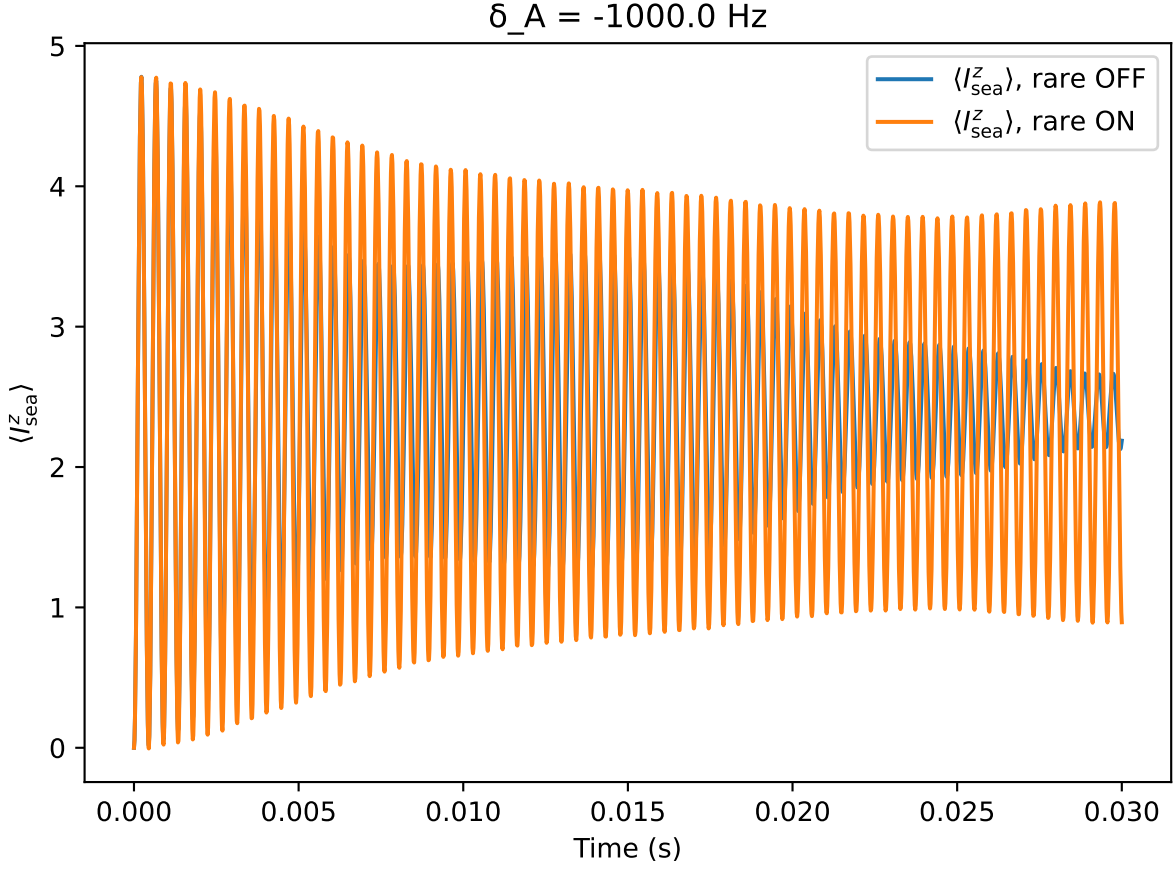
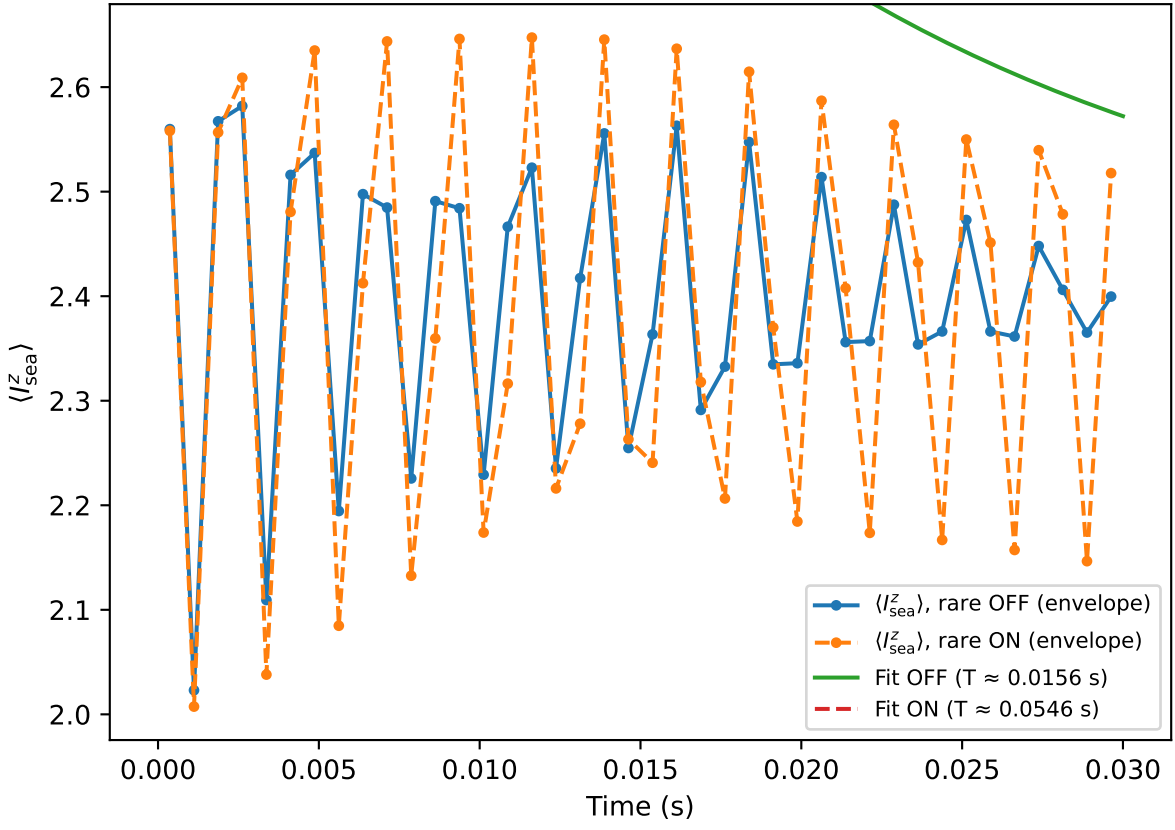
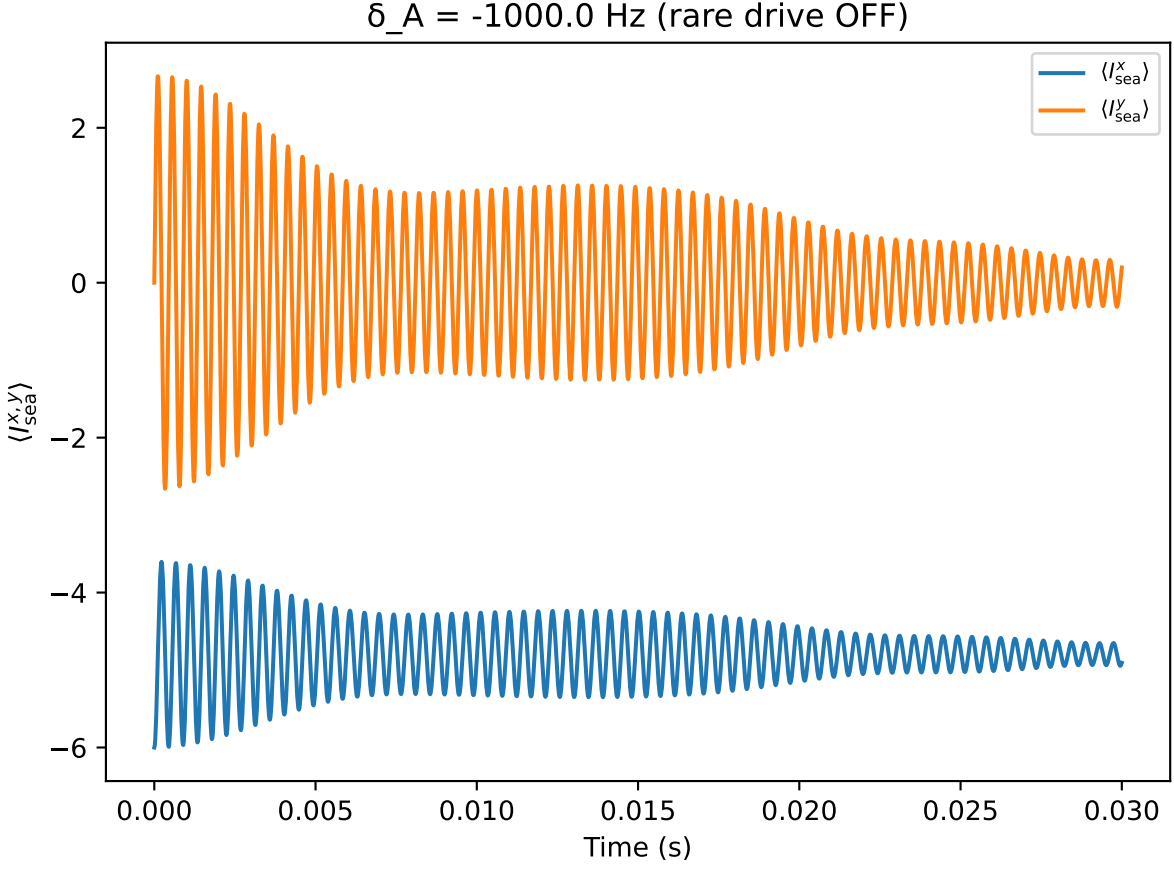
Sea detuning sweep report (Ga sea / Al rare)

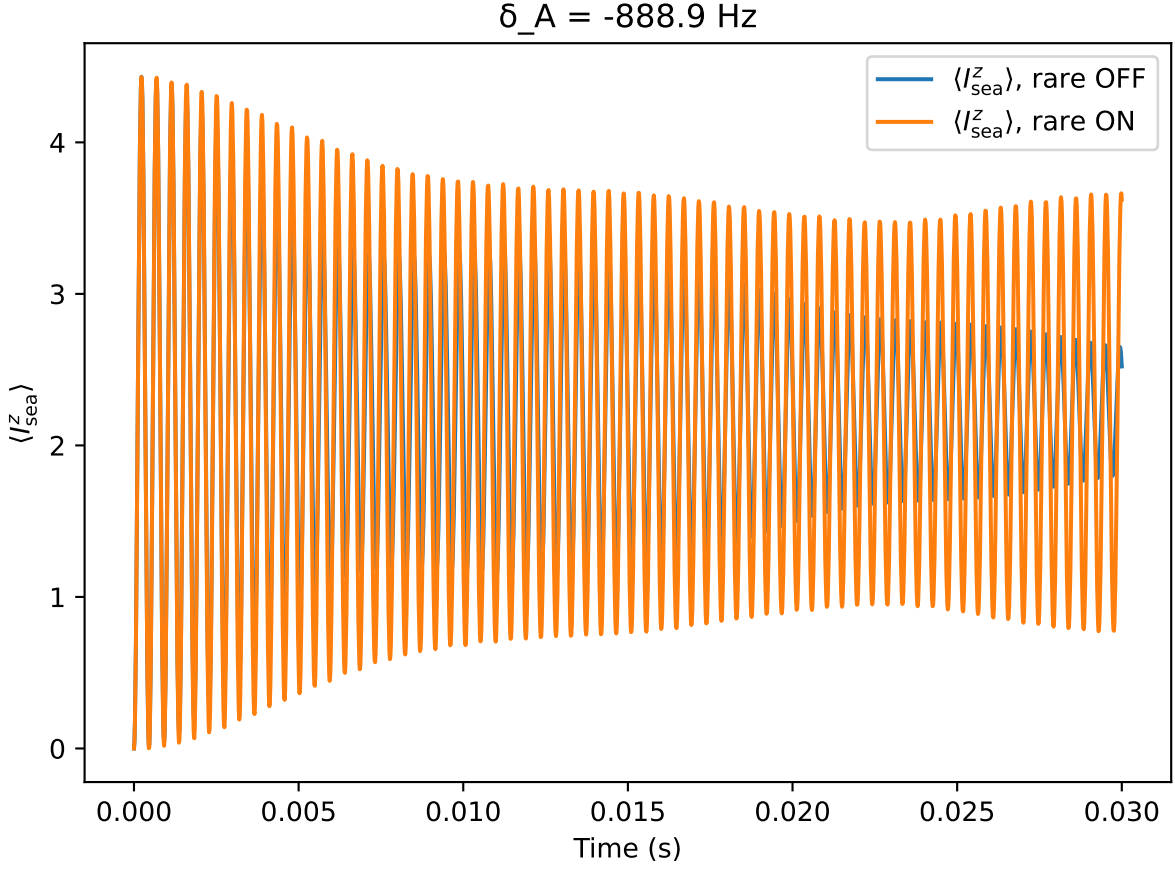
Global parameters (constant across sweep):
  f_Az (sea Larmor)   = 34.062 MHz
  f_Rz (rare Larmor)   = 33.308 MHz
  f1A (sea Rabi)   = 2.000 kHz
  f1R (rare Rabi)   = 1.000 kHz
  gamma_sea   = 7.134e+07 rad·s⁻¹·T⁻¹
  gamma_rare   = 6.976e+07 rad·s⁻¹·T⁻¹
  B0_common   = 3.000 T
  B1_sea   = 1.761e-04 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

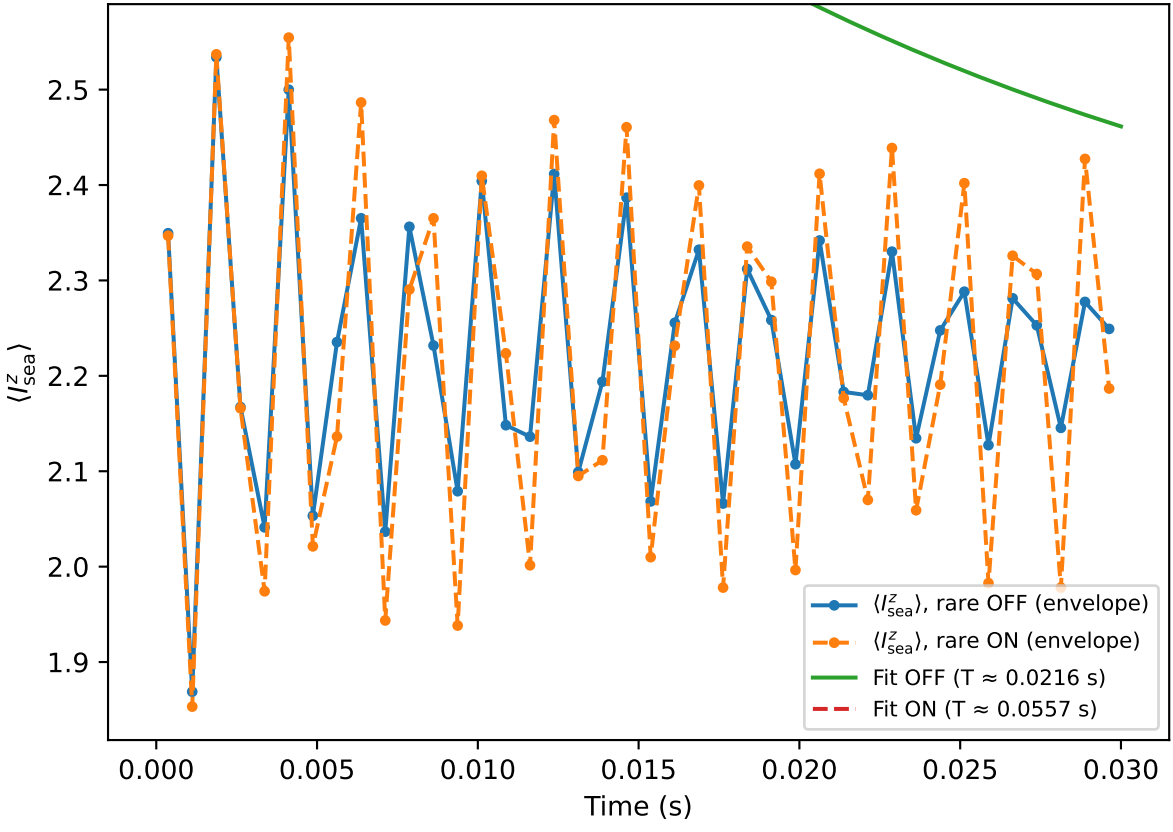
Sea detunings (δ_A = f_Az - f_rf,A) in Hz:
  -1000.0, -888.9, -777.8, -666.7, -555.6, -444.4, -333.3, -222.2, -111.1, +0.0

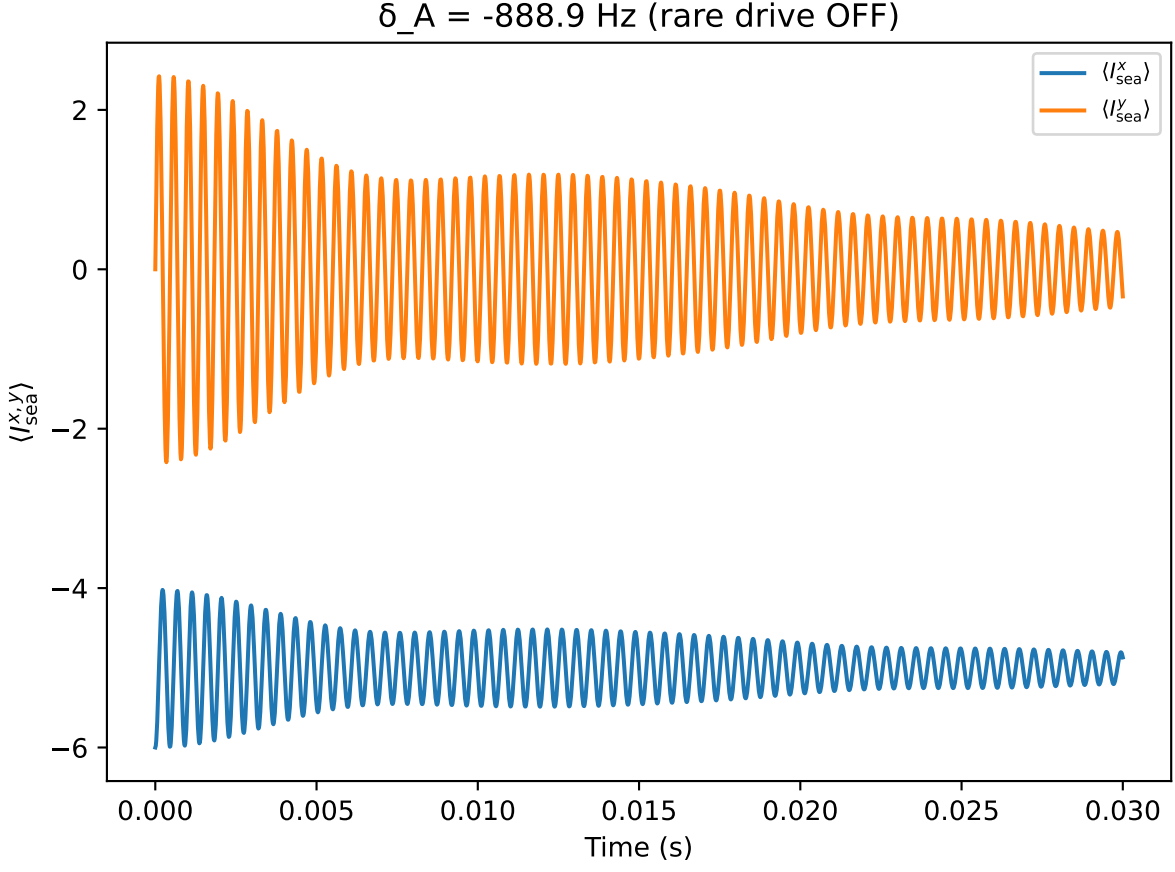

δ_A = -1000.0 Hz
⟨I^z_sea⟩, rare OFF
⟨I^z_sea⟩, rare ON
⟨I^z_sea⟩
Time (s)
0
1
2
3
4
5
0.000
0.005
0.010
0.015
0.020
0.025
0.030

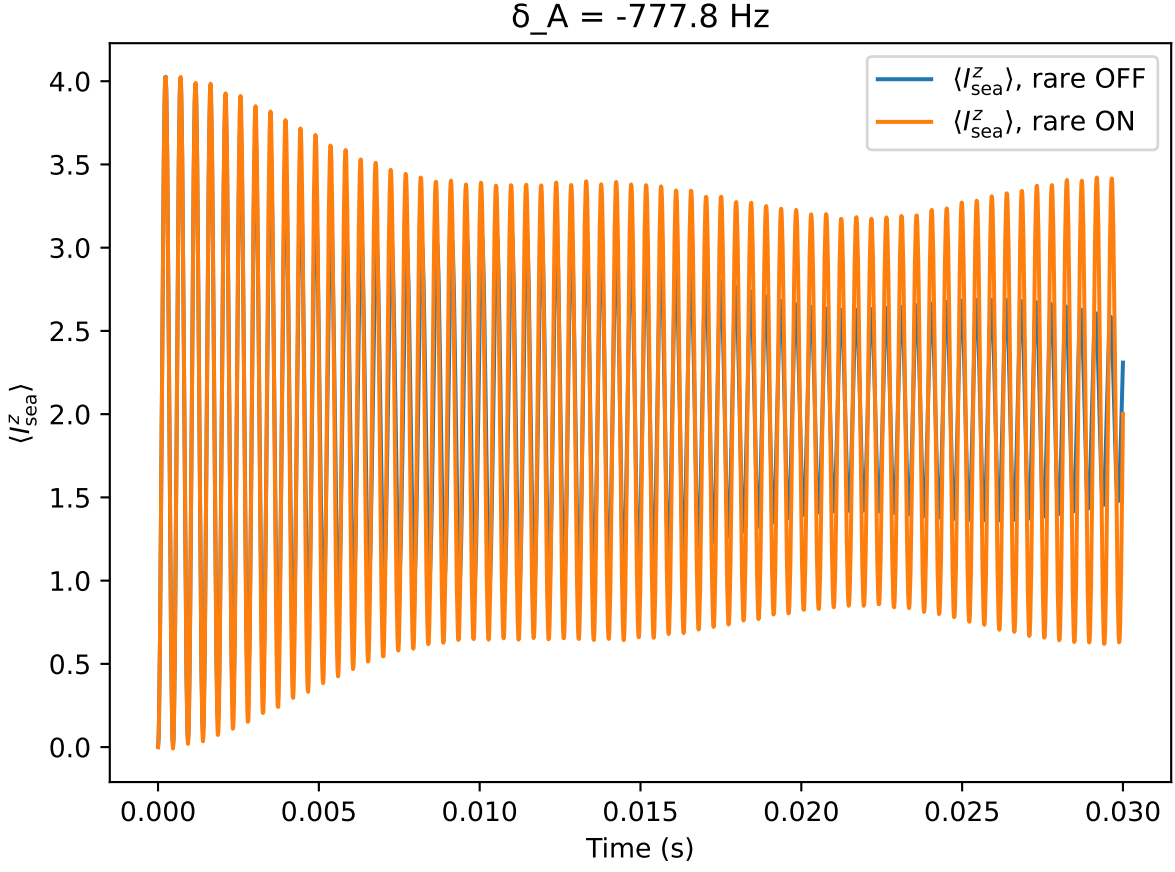

δ_A = -1000.0 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
2.0
2.1
2.2
2.3
2.4
2.5
2.6
0.000
0.005
0.010
0.015
0.020
0.025
0.030
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 0.0156 s)
Fit ON (T ≈ 0.0546 s)

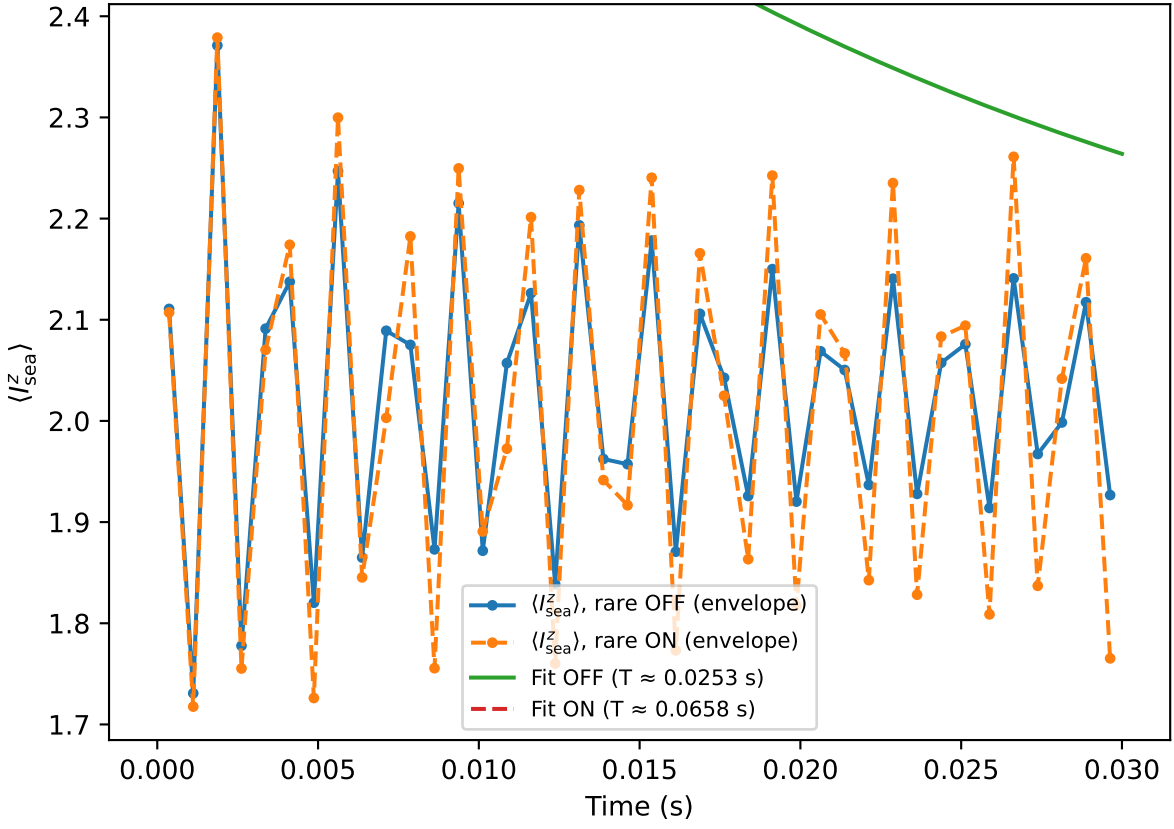

δ_A = -1000.0 Hz (rare drive OFF)
$\langle I^x_{sea} \rangle$
$\langle I^y_{sea} \rangle$
$\langle I^{x,y}_{sea} \rangle$
2
0
−2
−4
−6
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

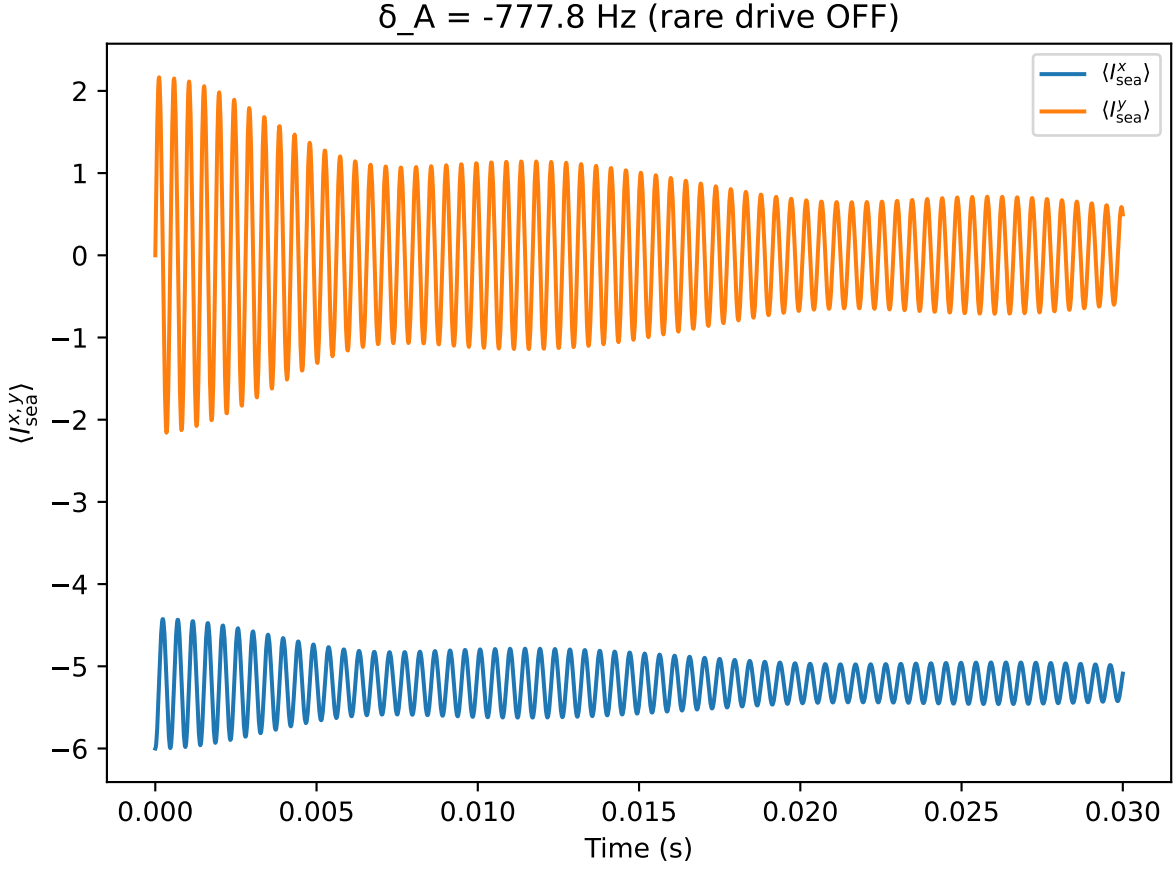

δ_A = -888.9 Hz
⟨I^z_{sea}⟩, rare OFF
⟨I^z_{sea}⟩, rare ON
⟨I^z_{sea}⟩
0
1
2
3
4
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

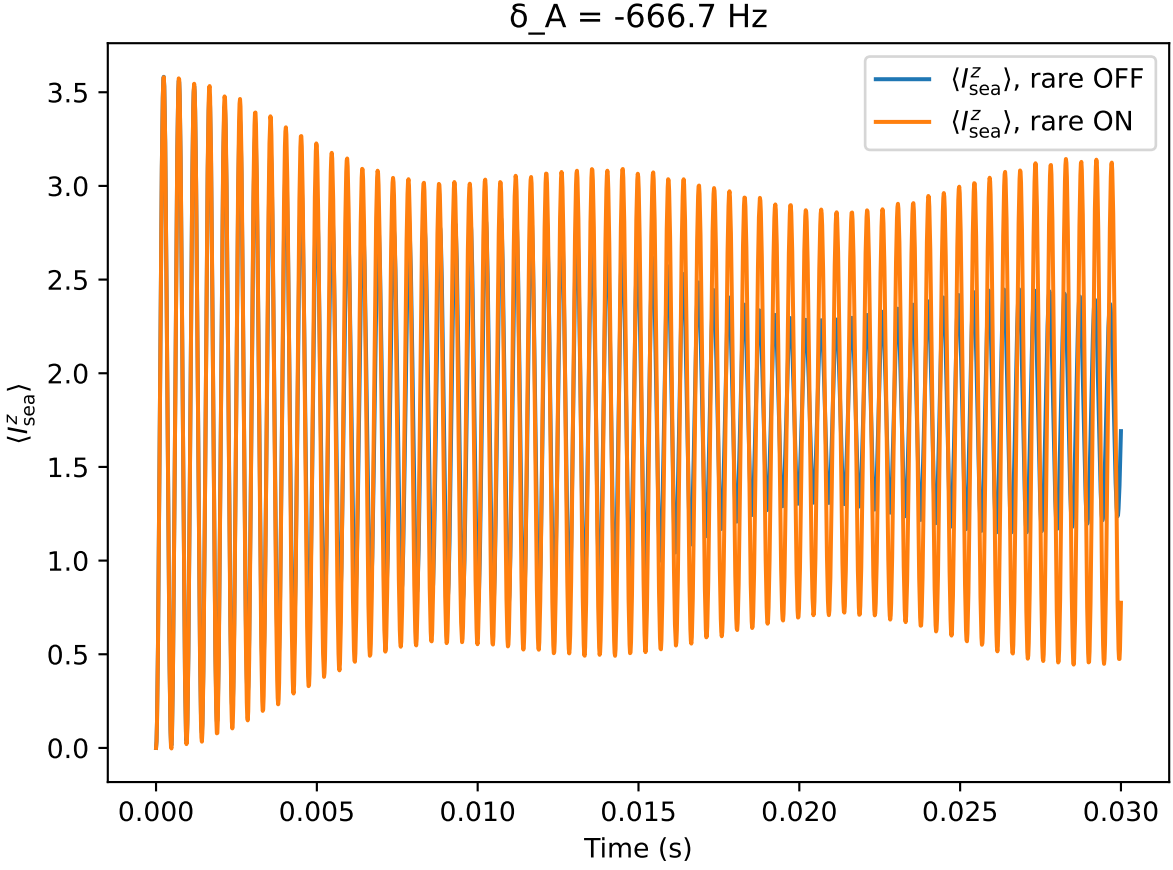

δ_A = -888.9 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
2.5
2.4
2.3
2.2
2.1
2.0
1.9
0.000
0.005
0.010
0.015
0.020
0.025
0.030
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 0.0216 s)
Fit ON (T ≈ 0.0557 s)

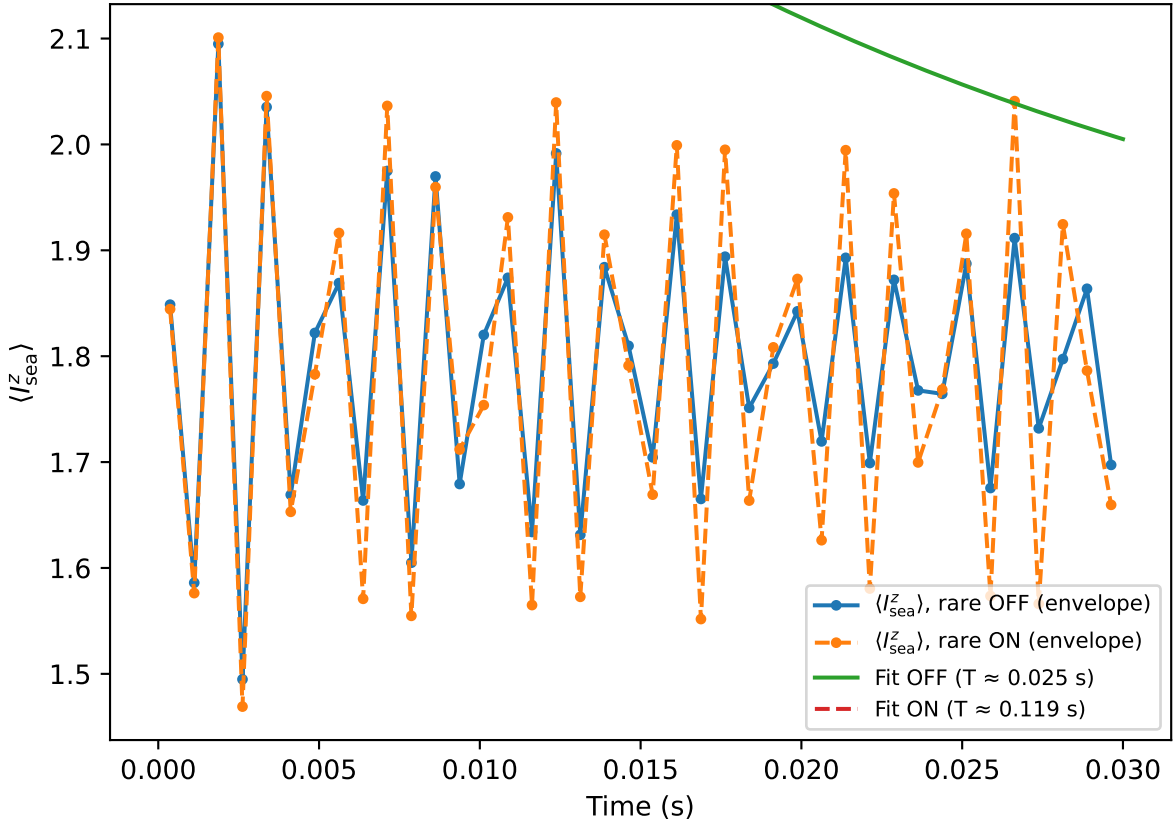

δ_A = -888.9 Hz (rare drive OFF)
$\langle I^x_{sea} \rangle$
$\langle I^y_{sea} \rangle$
$\langle I^{x,y}_{sea} \rangle$
2
0
−2
−4
−6
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

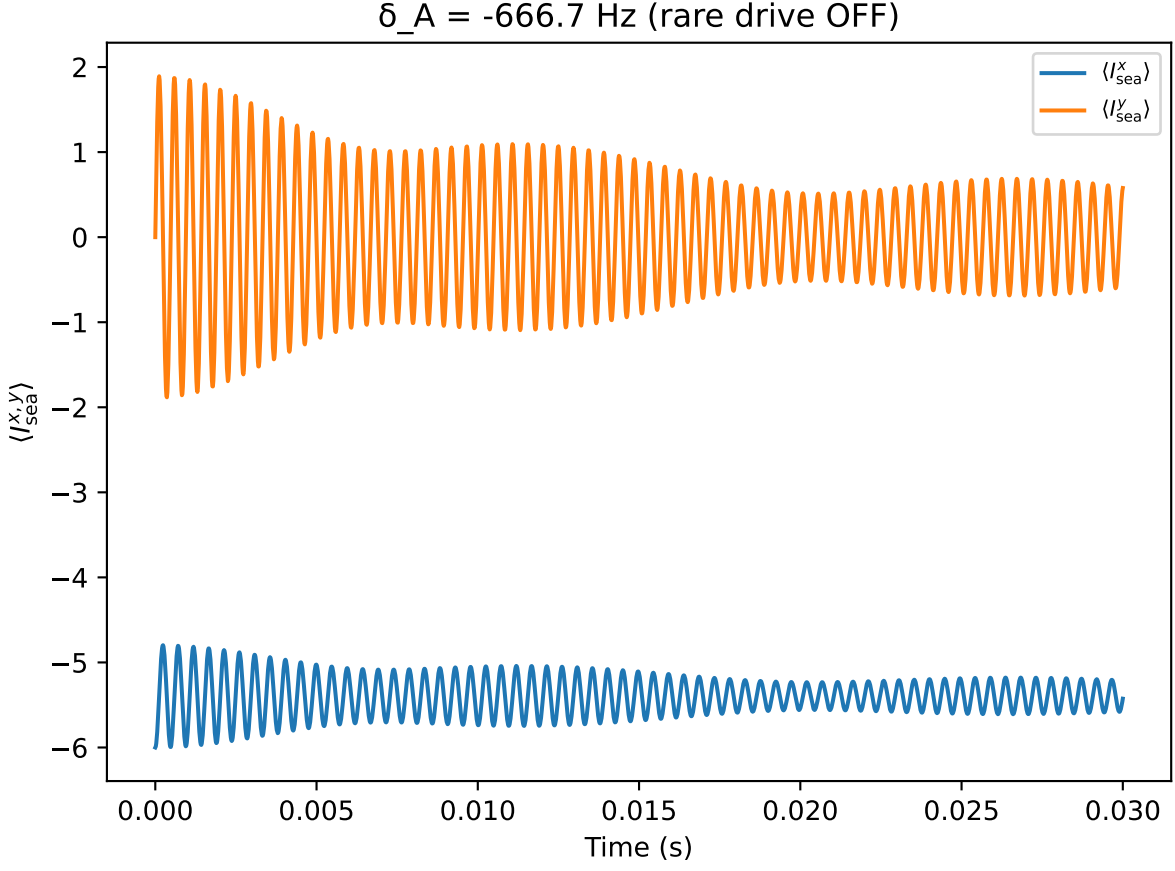

δ_A = -777.8 Hz
⟨I^z_{sea}⟩, rare OFF
⟨I^z_{sea}⟩, rare ON
⟨I^z_{sea}⟩
Time (s)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
0.000
0.005
0.010
0.015
0.020
0.025
0.030

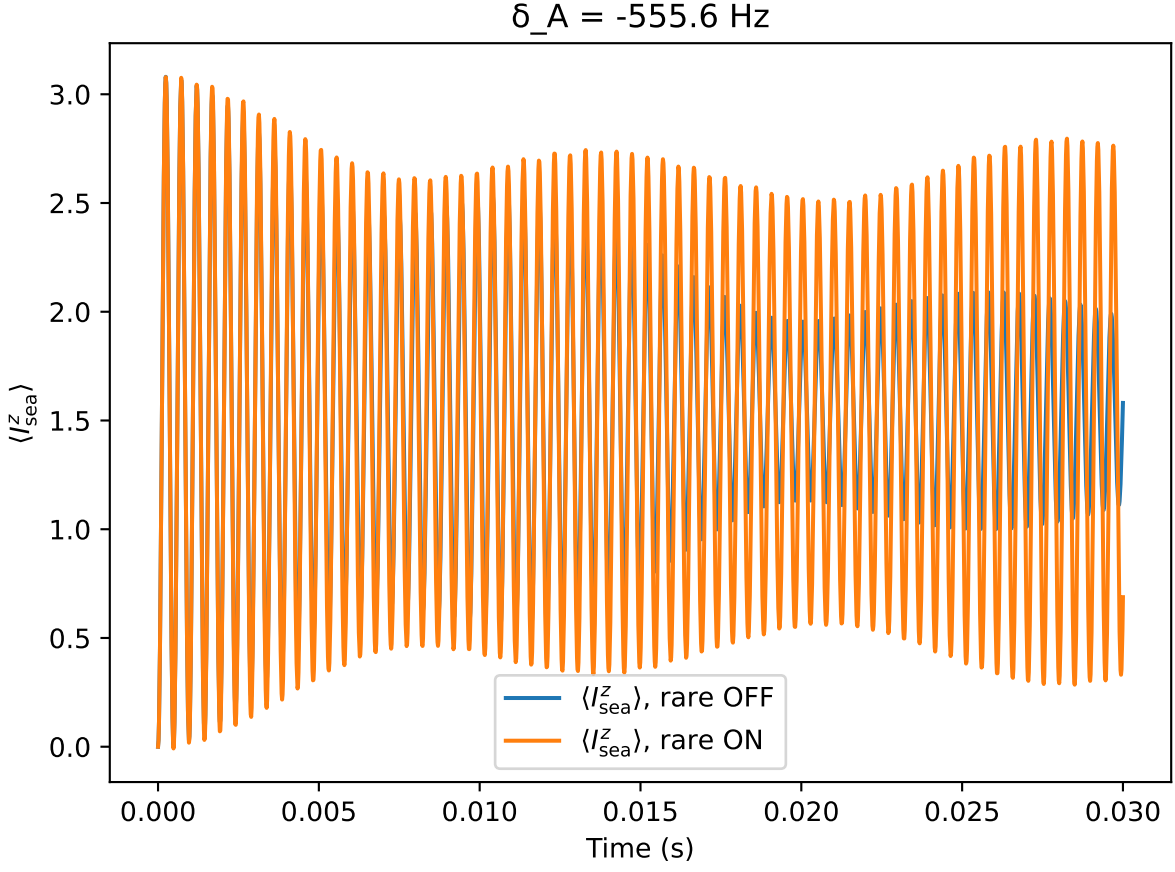

δ_A = -777.8 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
2.4
2.3
2.2
2.1
2.0
1.9
1.8
1.7
0.000
0.005
0.010
0.015
0.020
0.025
0.030
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 0.0253 s)
Fit ON (T ≈ 0.0658 s)

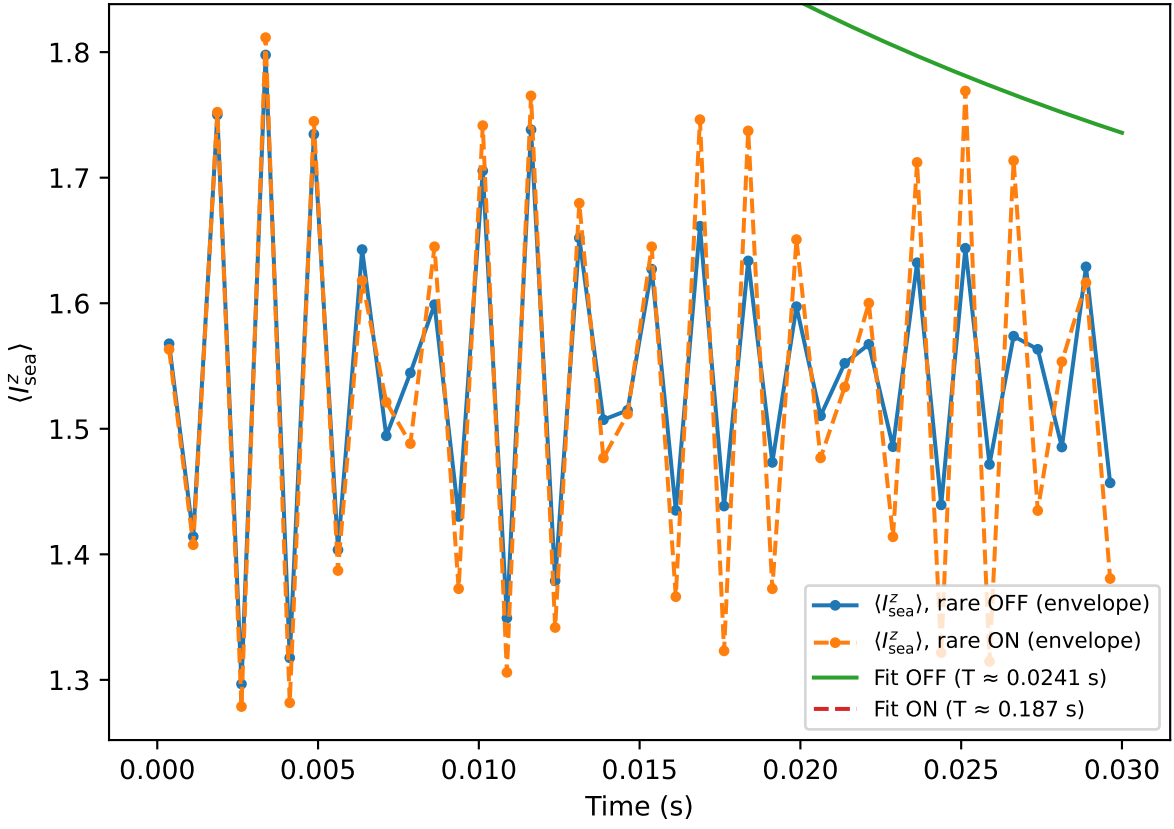

δ_A = -777.8 Hz (rare drive OFF)
$\langle I^x_{sea} \rangle$
$\langle I^y_{sea} \rangle$
$\langle I^{x,y}_{sea} \rangle$
2
1
0
−1
−2
−3
−4
−5
−6
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

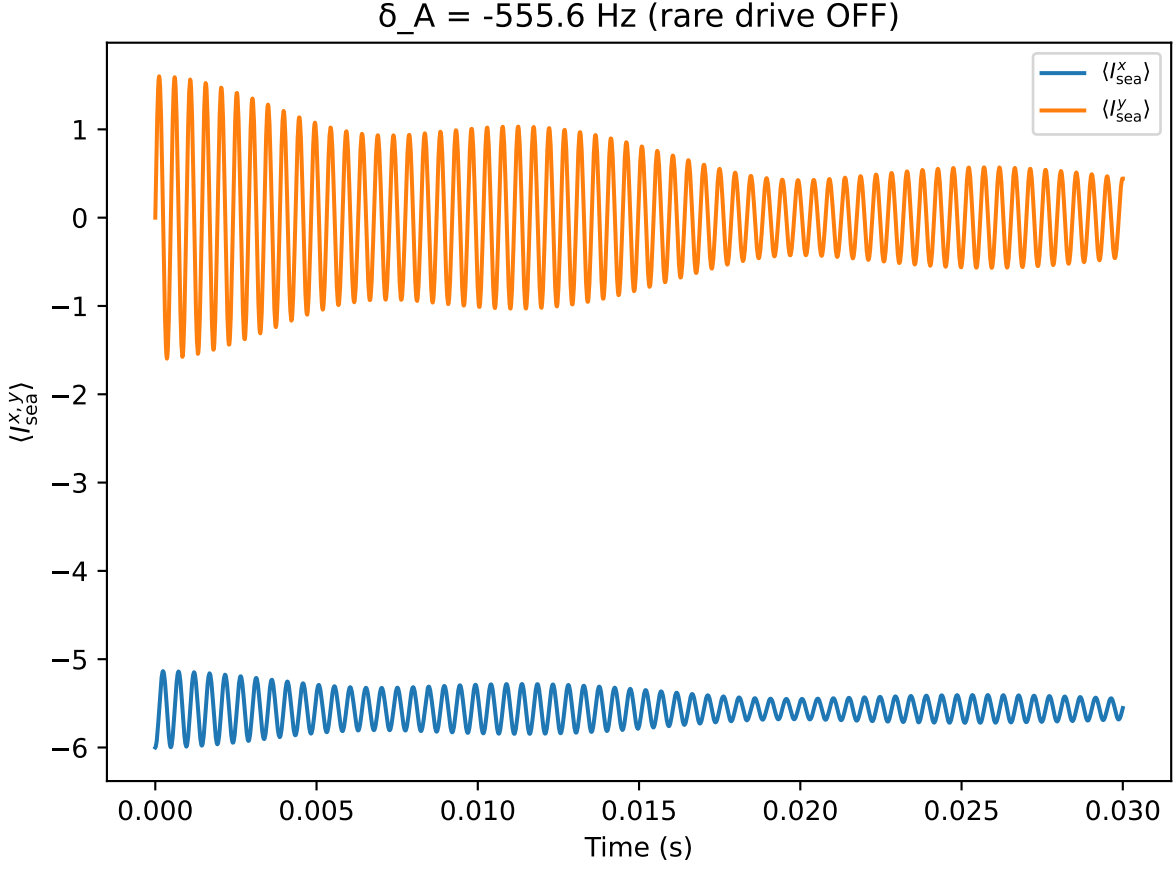

δ_A = -666.7 Hz
⟨I^z_{sea}⟩, rare OFF
⟨I^z_{sea}⟩, rare ON
⟨I^z_{sea}⟩
Time (s)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
0.000
0.005
0.010
0.015
0.020
0.025
0.030

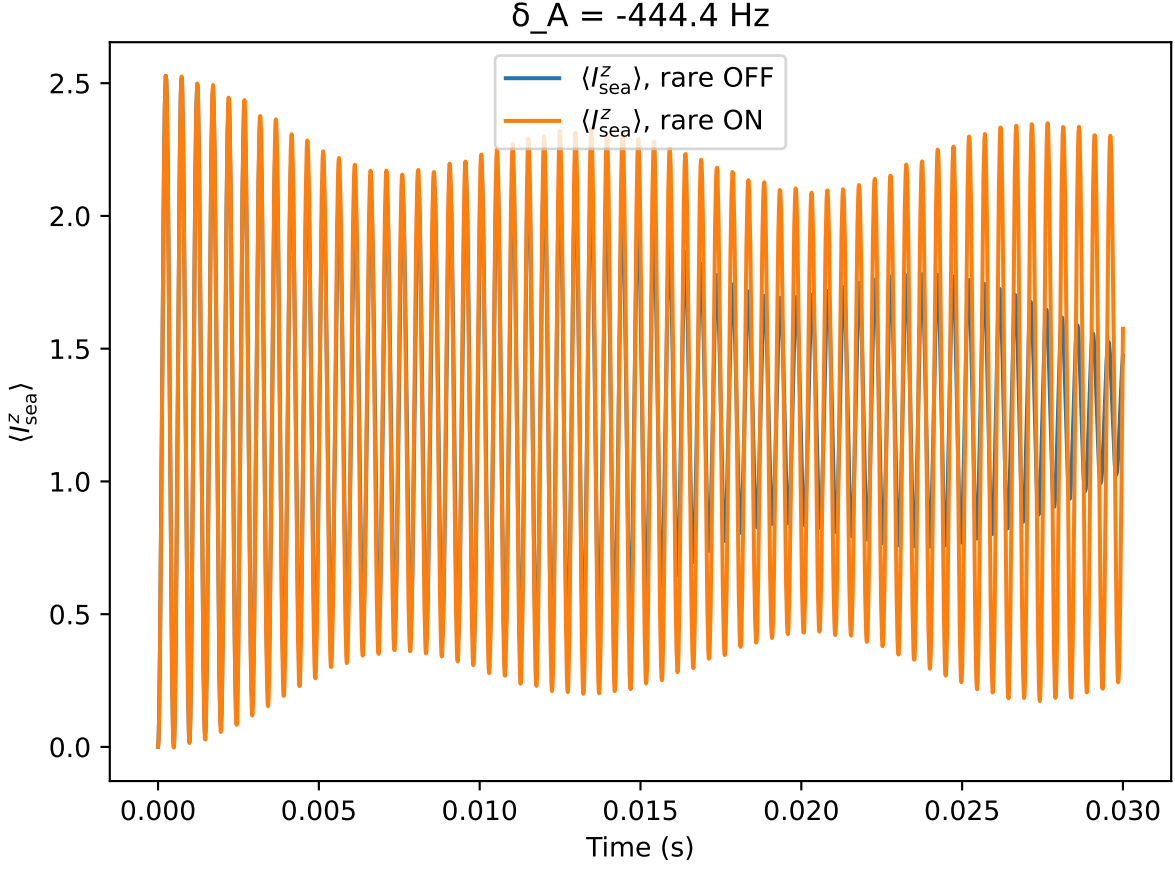

δ_A = -666.7 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
2.1
2.0
1.9
1.8
1.7
1.6
1.5
0.000
0.005
0.010
0.015
0.020
0.025
0.030
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 0.025 s)
Fit ON (T ≈ 0.119 s)

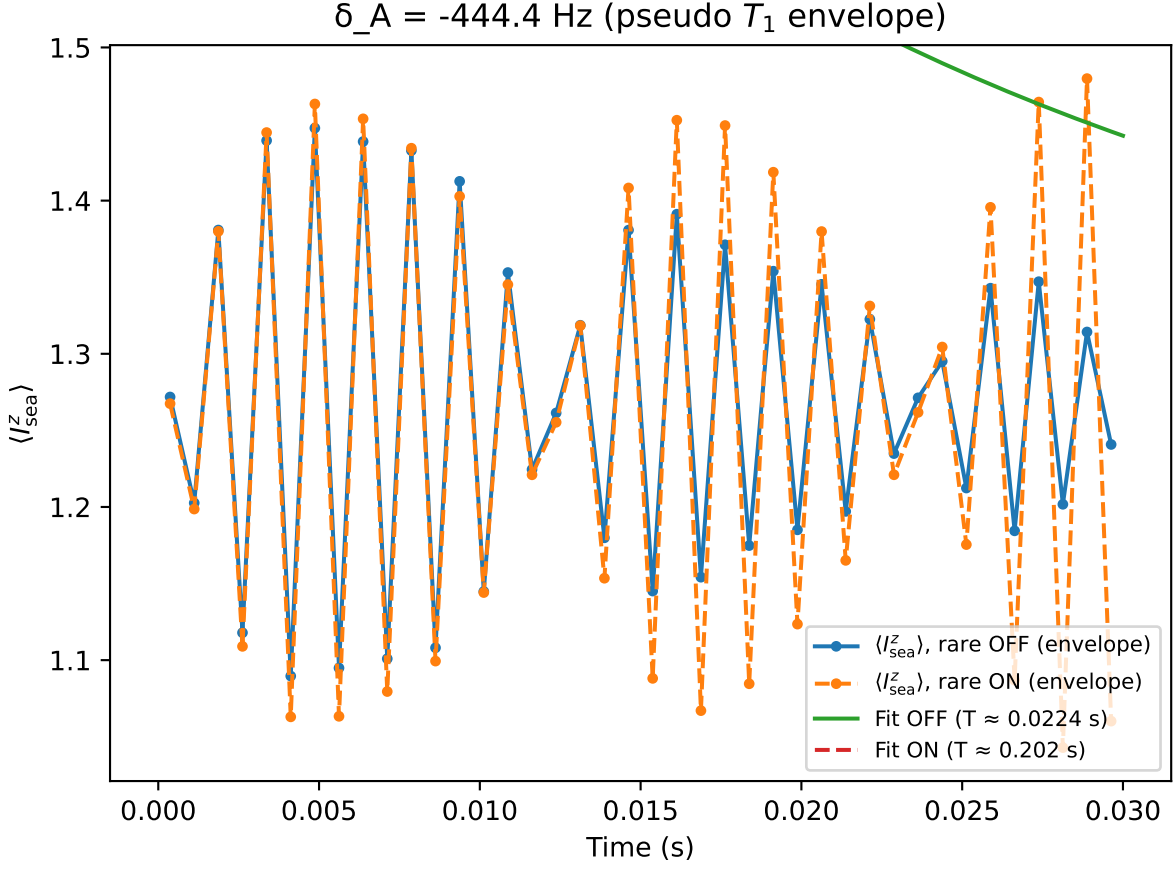

δ_A = -666.7 Hz (rare drive OFF)
$\langle I^x_{sea} \rangle$
$\langle I^y_{sea} \rangle$
$\langle I^{x,y}_{sea} \rangle$
2
1
0
−1
−2
−3
−4
−5
−6
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

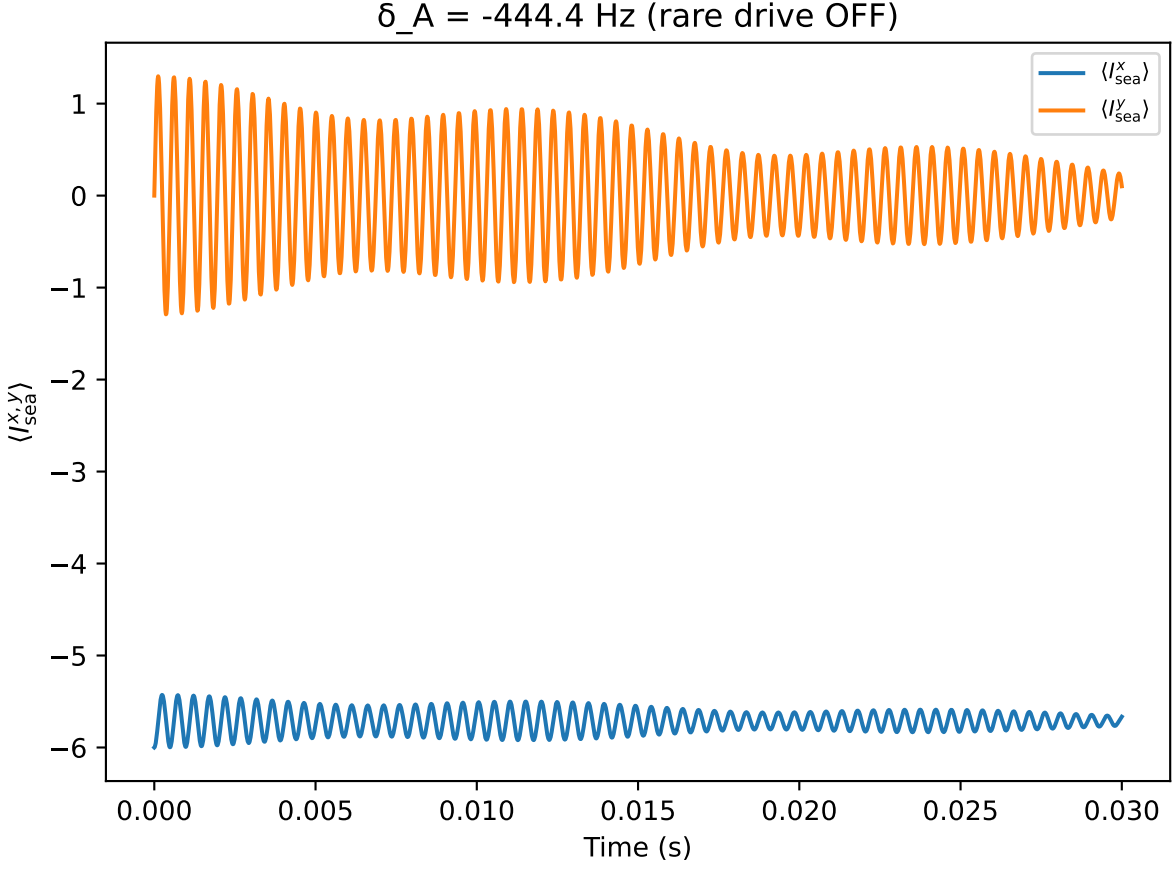

δ_A = -555.6 Hz
3.0
2.5
2.0
1.5
1.0
0.5
0.0
$\langle I^z_{sea} \rangle$
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF
$\langle I^z_{sea} \rangle$, rare ON

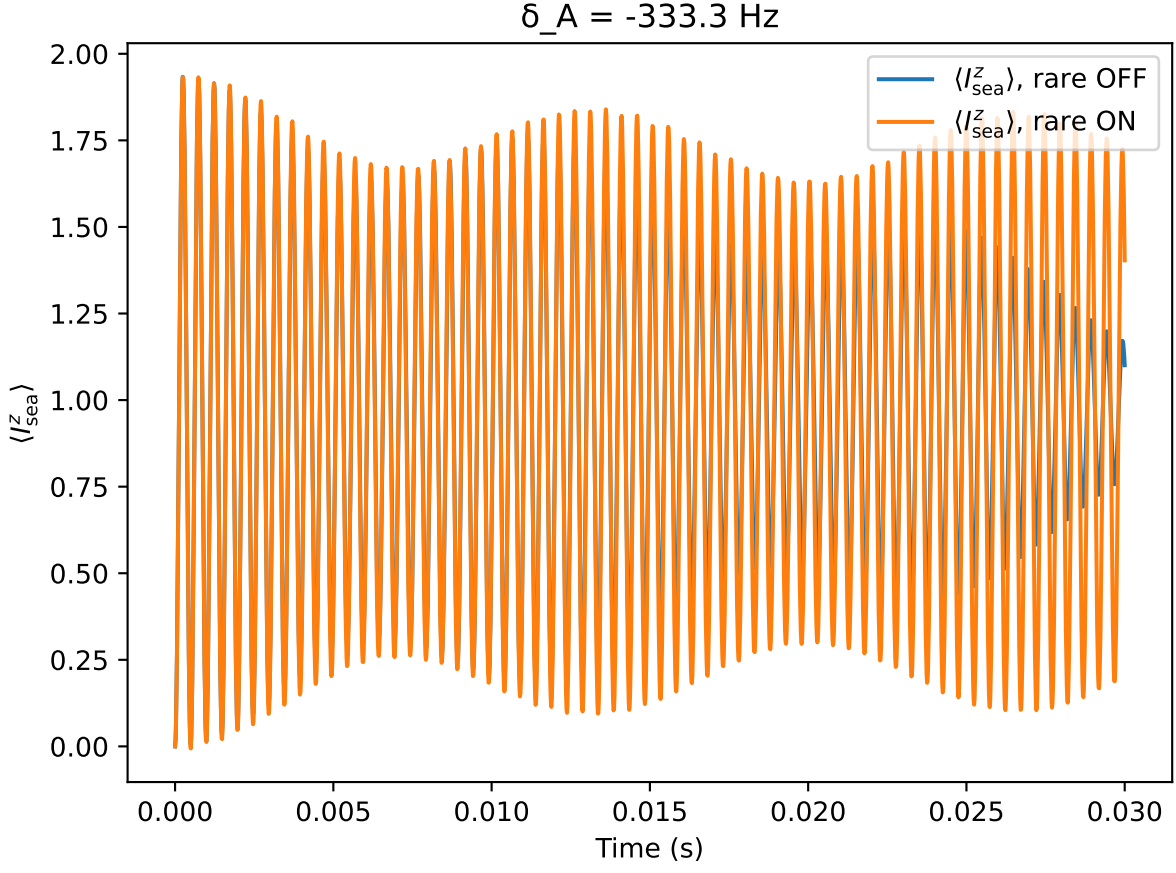

δ_A = -555.6 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
1.8
1.7
1.6
1.5
1.4
1.3
0.000
0.005
0.010
0.015
0.020
0.025
0.030
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 0.0241 s)
Fit ON (T ≈ 0.187 s)

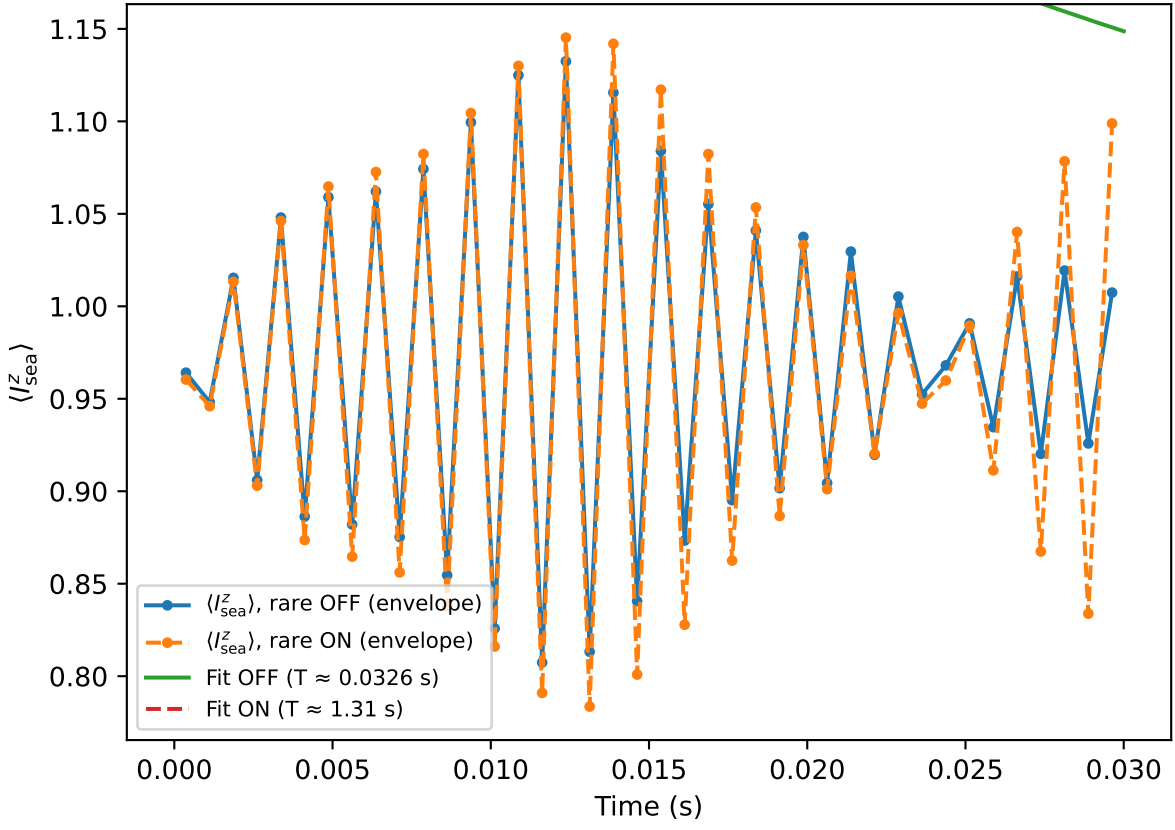

δ_A = -555.6 Hz (rare drive OFF)
$\langle I^x_{sea} \rangle$
$\langle I^y_{sea} \rangle$
$\langle I^{x,y}_{sea} \rangle$
1
0
−1
−2
−3
−4
−5
−6
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

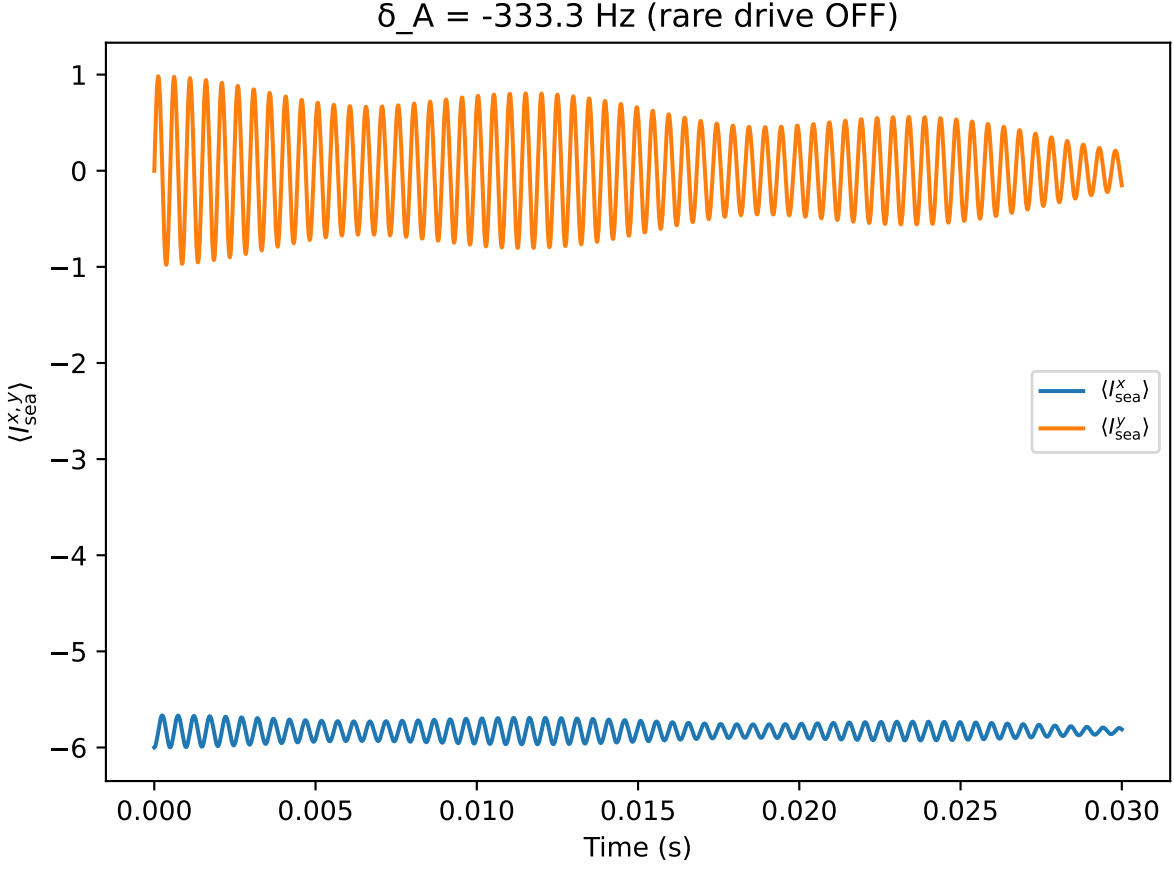

δ_A = -444.4 Hz
⟨I^z_{sea}⟩, rare OFF
⟨I^z_{sea}⟩, rare ON
⟨I^z_{sea}⟩
2.5
2.0
1.5
1.0
0.5
0.0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

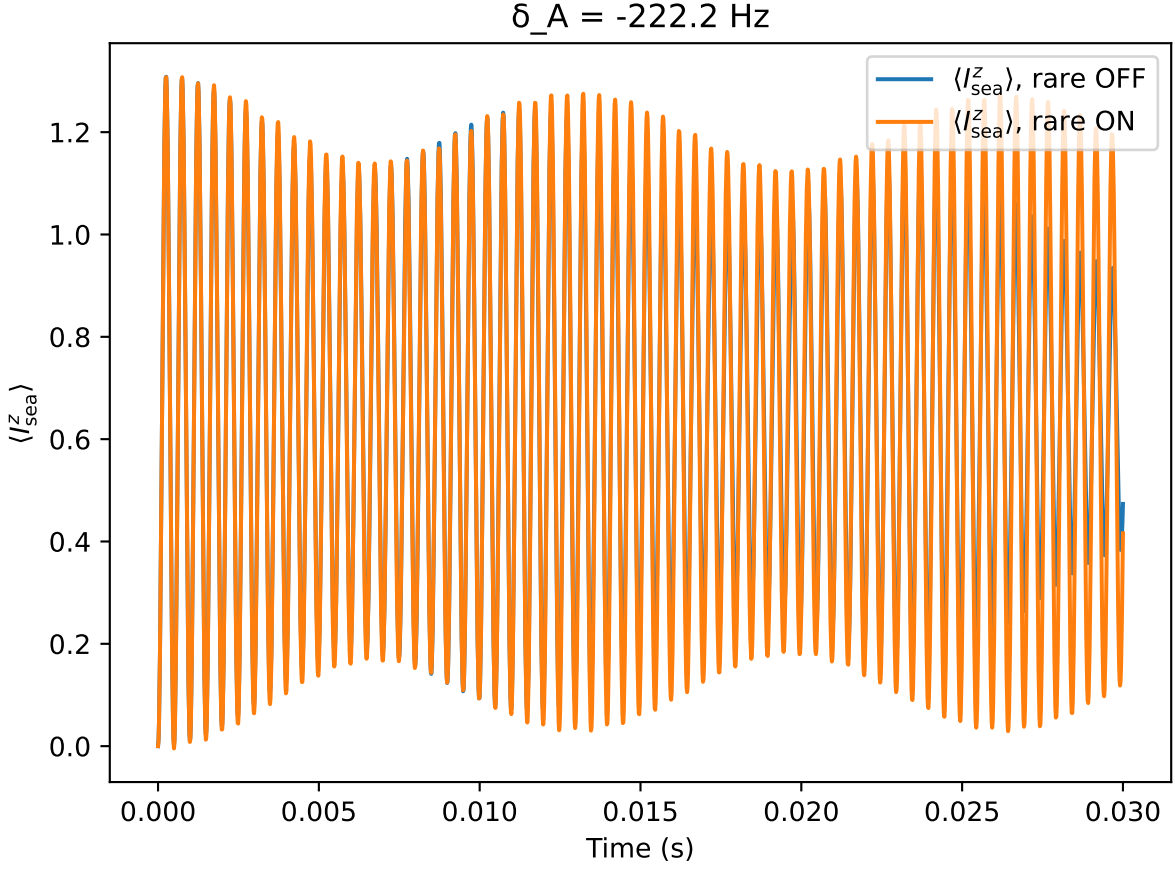

δ_A = -444.4 Hz (pseudo T_1 envelope)
1.5
1.4
1.3
1.2
1.1
$\langle I^z_{sea} \rangle$
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 0.0224 s)
Fit ON (T ≈ 0.202 s)

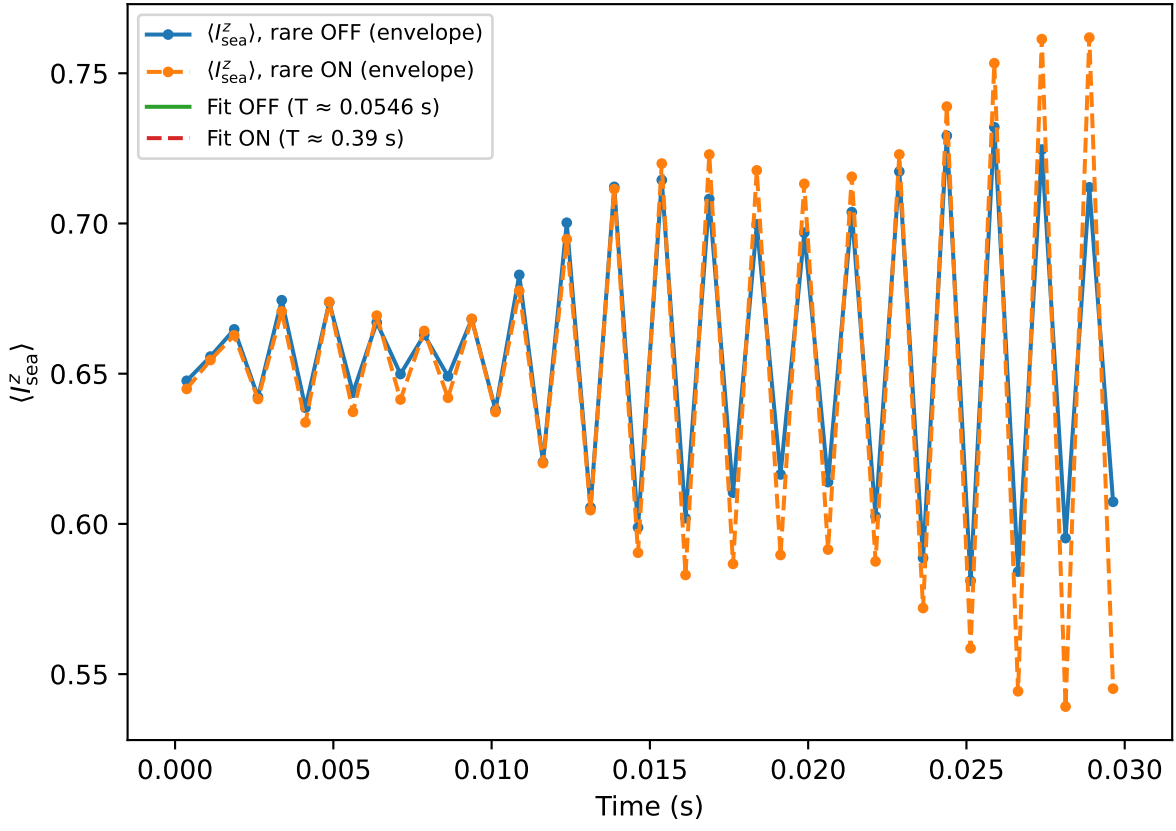

δ_A = -444.4 Hz (rare drive OFF)
$\langle I^x_{sea} \rangle$
$\langle I^y_{sea} \rangle$
$\langle I^{x,y}_{sea} \rangle$
1
0
−1
−2
−3
−4
−5
−6
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

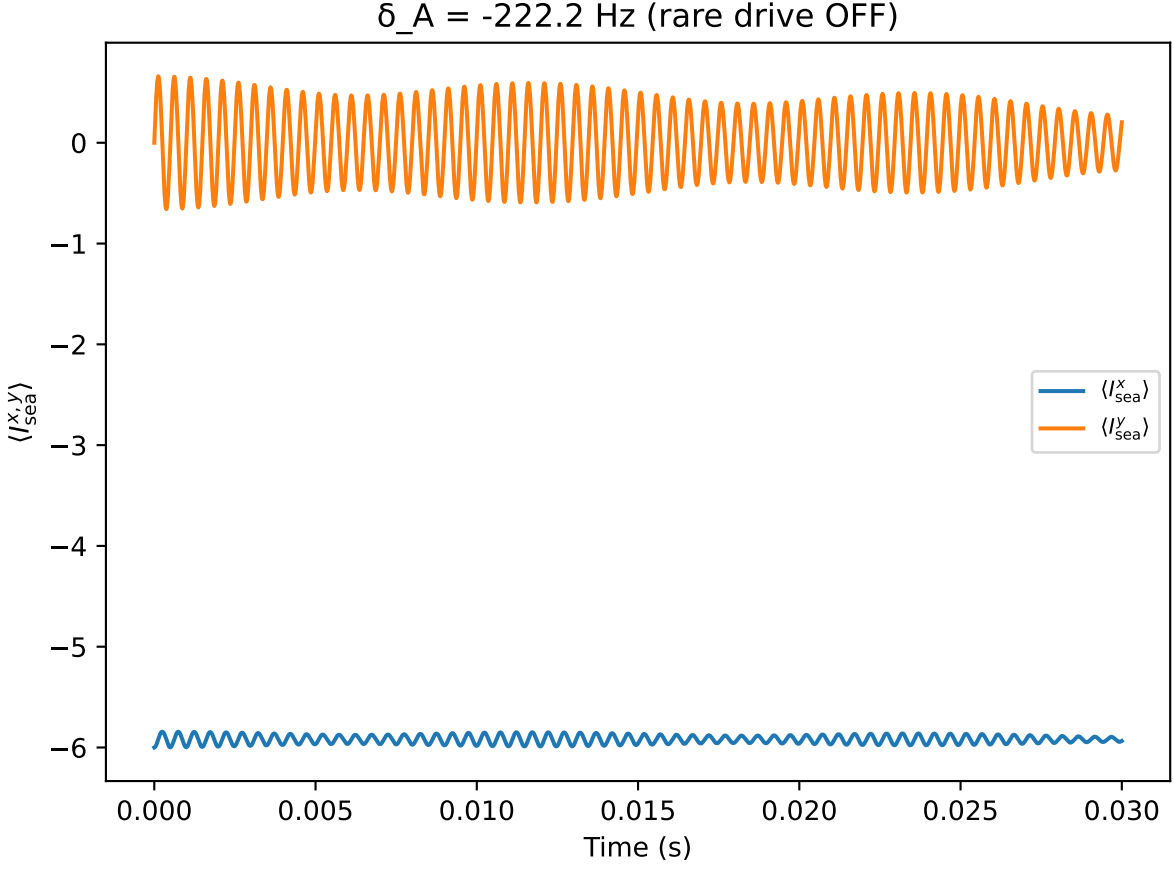

δ_A = -333.3 Hz
⟨I^z_{sea}⟩, rare OFF
⟨I^z_{sea}⟩, rare ON
⟨I^z_{sea}⟩
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

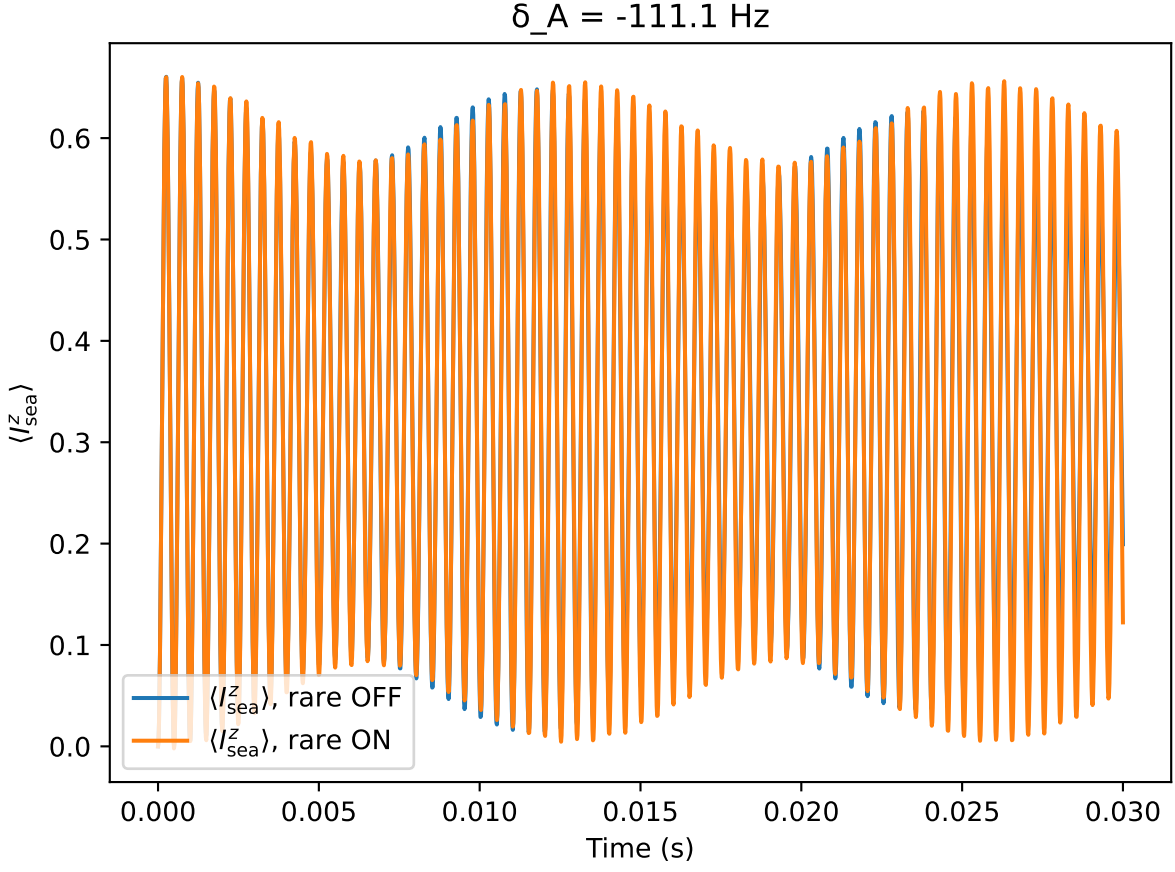

δ_A = -333.3 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$
Time (s)
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.000
0.005
0.010
0.015
0.020
0.025
0.030
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 0.0326 s)
Fit ON (T ≈ 1.31 s)

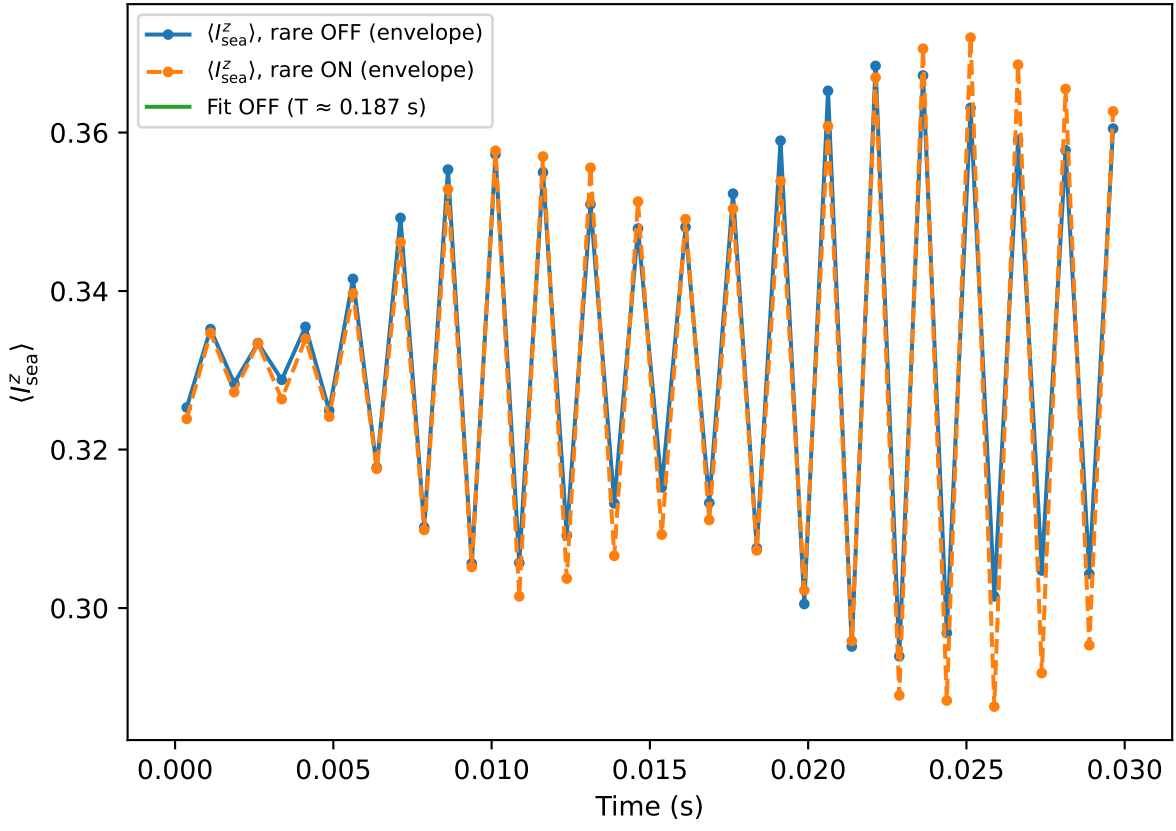

δ_A = -333.3 Hz (rare drive OFF)
1
0
−1
−2
−3
−4
−5
−6
⟨I^{x,y}_sea⟩
⟨I^x_sea⟩
⟨I^y_sea⟩
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

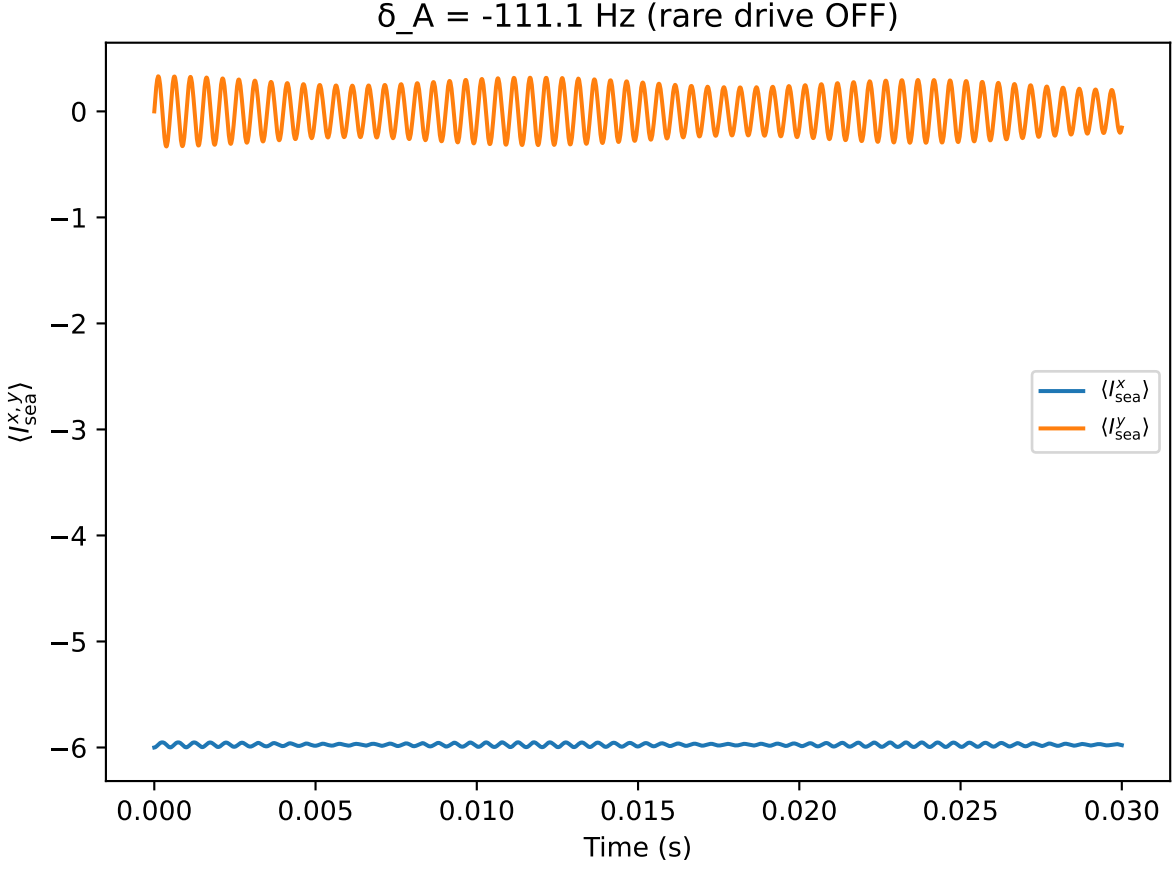

δ_A = -222.2 Hz
⟨I^z_sea⟩, rare OFF
⟨I^z_sea⟩, rare ON
⟨I^z_sea⟩
Time (s)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0.000
0.005
0.010
0.015
0.020
0.025
0.030

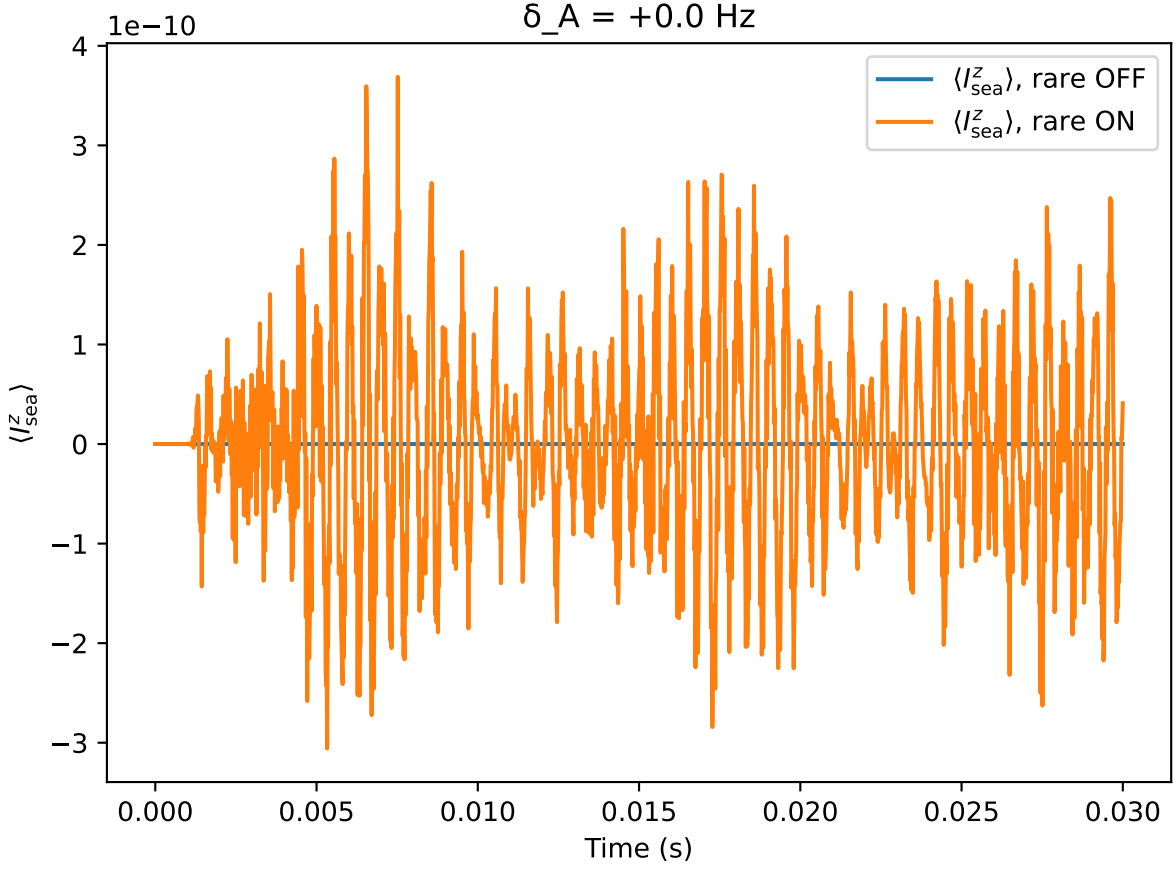

δ_A = -222.2 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 0.0546 s)
Fit ON (T ≈ 0.39 s)
$\langle I^z_{sea} \rangle$
0.75
0.70
0.65
0.60
0.55
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

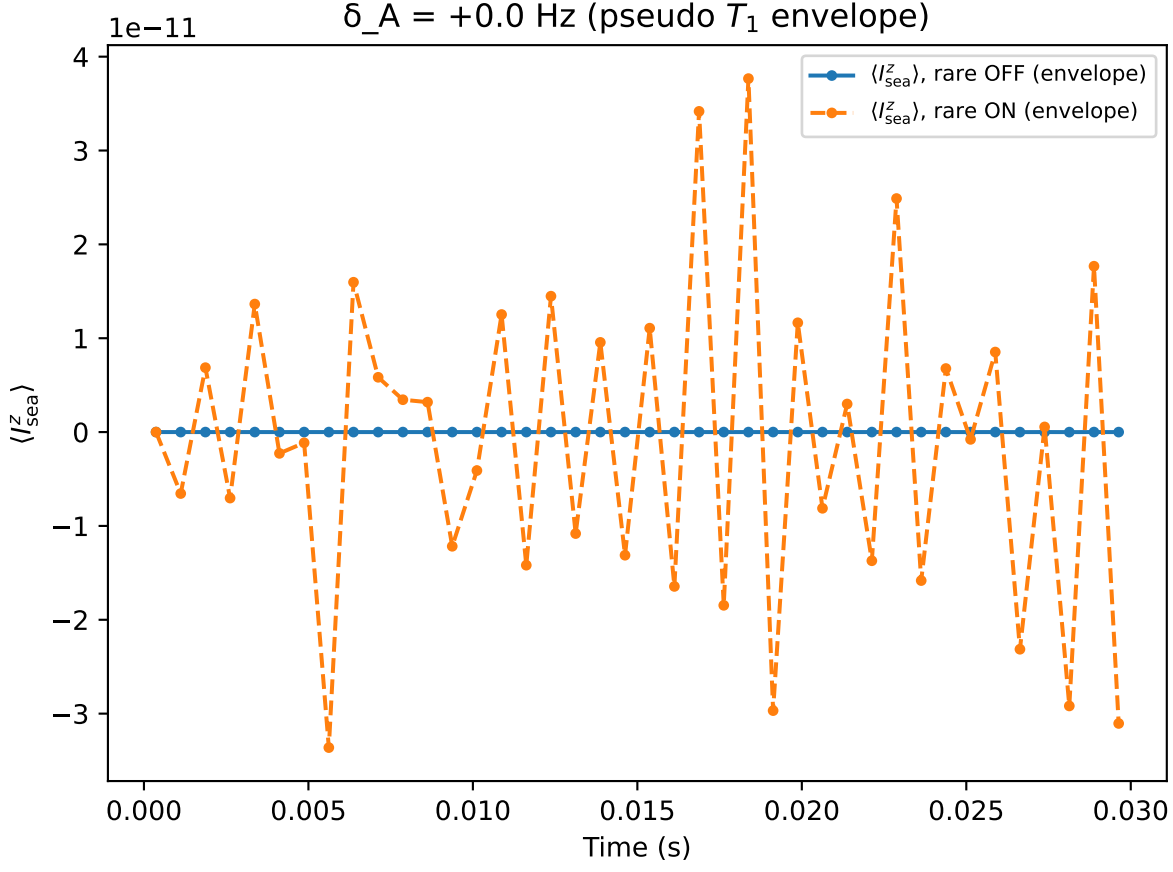

δ_A = -222.2 Hz (rare drive OFF)
0
−1
−2
−3
−4
−5
−6
$\langle I^{x,y}_{\mathrm{sea}} \rangle$
$\langle I^{x}_{\mathrm{sea}} \rangle$
$\langle I^{y}_{\mathrm{sea}} \rangle$
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

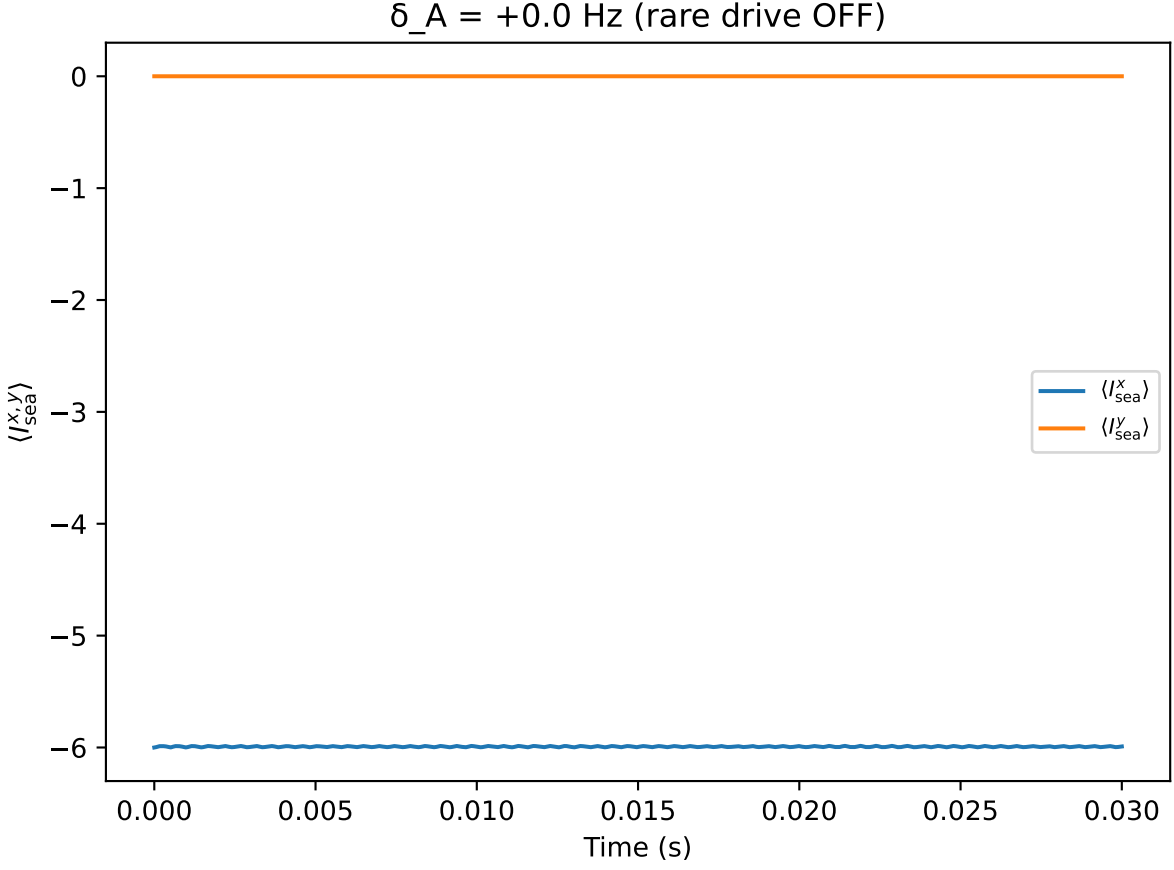

δ_A = -111.1 Hz
0.6
0.5
0.4
0.3
0.2
0.1
0.0
$\langle I^z_{sea} \rangle$
$\langle I^z_{sea} \rangle$, rare OFF
$\langle I^z_{sea} \rangle$, rare ON
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)


δ_A = -111.1 Hz (pseudo T_1 envelope)
$\langle I^z_{sea} \rangle$, rare OFF (envelope)
$\langle I^z_{sea} \rangle$, rare ON (envelope)
Fit OFF (T ≈ 0.187 s)
0.36
0.34
0.32
0.30
$\langle I^z_{sea} \rangle$
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)


δ_A = -111.1 Hz (rare drive OFF)
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
$\langle I^z_{sea} \rangle$
$\langle I^z_{sea} \rangle$, rare OFF
$\langle I^z_{sea} \rangle$, 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
$\langle I^{x,y}_{\mathrm{sea}} \rangle$
$\langle I^{x}_{\mathrm{sea}} \rangle$
$\langle I^{y}_{\mathrm{sea}} \rangle$
0.000
0.005
0.010
0.015
0.020
0.025
0.030
Time (s)

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
-888.9	0.0216	0.0557
-777.8	0.0253	0.0658
-666.7	0.025	0.119
-555.6	0.0241	0.187
-444.4	0.0224	0.202
-333.3	0.0326	1.31
-222.2	0.0546	0.39
-111.1	0.187	NA
+0.0	NA	NA