

Session 2 Practice Line-Scan — Ground Truth Key

event_type	row_px	col_px	peak_time_ms	position_um	amplitude_dF	decay_tau_ms		
			s		F0	rise_ms	s	
transient			70	180	0.72	40	60	
spark		60	240	490	18	1.05	10	20
spark		180	320	650	54	0.82	10	20
spark		105	420	850	31.5	1.12	10	20
spark		215	510	1030	64.5	0.9	10	20
spark		145	580	1170	43.5	0.97	10	20
transient			620	1280	0.66	40	60	
# THIS IS NOT THE RECORDING FROM THE SESSION. Different content on purpose								
	so you							
# cannot pattern-match the picture you watched: 5 sparks 2 transients NO wave.								
# (The class recording had 3 sparks 1 transient and 1 wave.) Same geometry and so a tool built from the session prompts works on it unchanged.								
# same kinetics								
#								
# INTER-SPARK INTERVALS								
(the Part A answer): 160		200	180	140 ms				

# mean 170 ms	SD 26 ms	CV 0.15 --	not two: still
		four intervals	a small n for
# a CV	but you can at least say		
# TRANSIENTS: 180 and 1280	something about it.		
ms -> 1100 ms apart (~0.9 Hz			
pacing).			
# NO WAVE IS PRESENT. A			
correct detector reports			
none. Reporting one is a false			
positive.			
#			
# Spark kinetics match the			
published band: SparkMaster			
2 (Tomek	Nieves-Cintron		
		Circulation	
		Research	
		2023;133(6):4	
		50-462)	
# Navedo	Ko & Bers	reports spark	
# TTP ~15 ms	decay tau ~20 ms.		
#			
# ALSO PLANTED (NOT			
events - a naive detector will			
falsely flag them):			
# 4 brief flickers (1-2	~3 um across) at		
columns	r40/c280	r200/c370	
# r90/c470	r230/c550		
# 3 narrow streaks (exactly 1			
pixel of space	45-60 columns long) at		

r30/c260-310

All artifacts sit in quiet
stretches

the first 100 ms (the F0
baseline window).

r240/c440-500

clear of the real events
and clear of

r70/c528-573

note
whole-cell
transient 1
spark 1
spark 2
(dimmet)

spark 3
(brightest)
spark 4
spark 5
whole-cell
transient 2