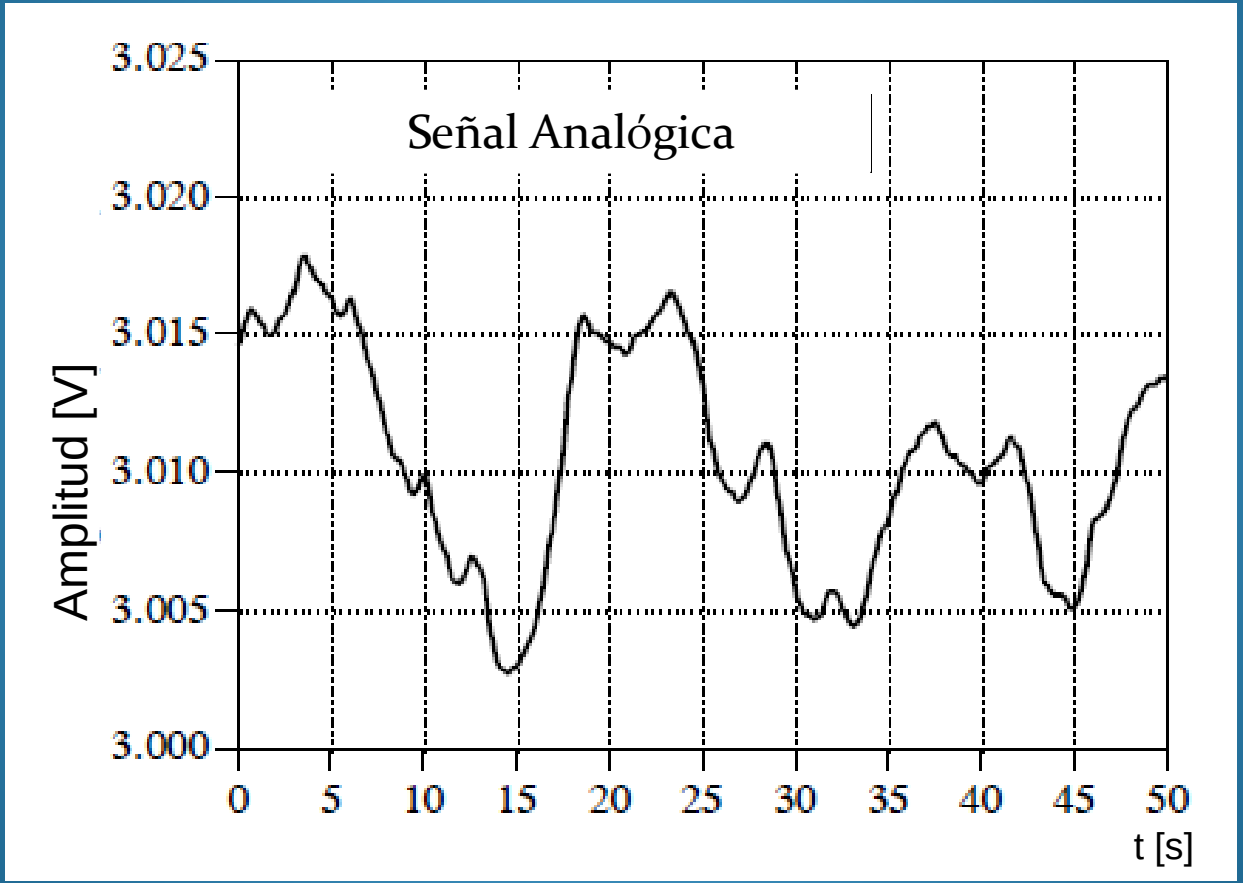
CENTRO UNIVERSITARIO DE AUTOMACIÓN Y ROBÓTICA

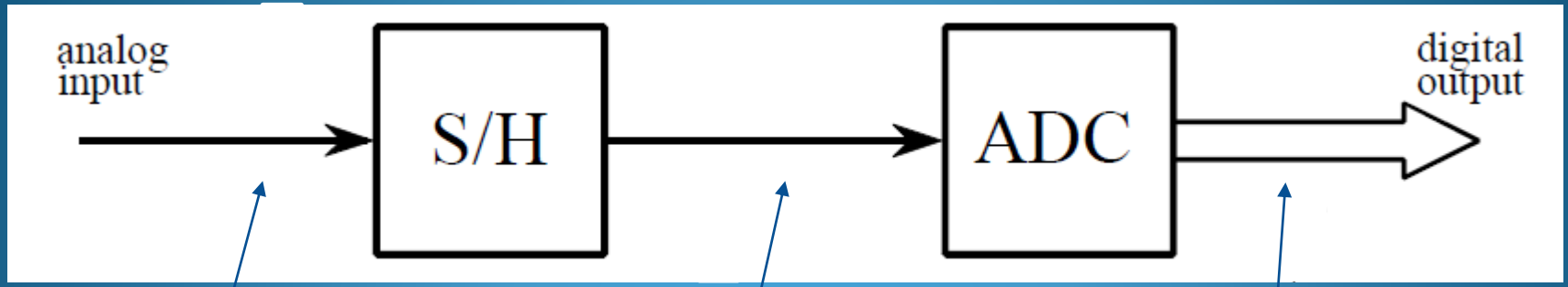
Facultad Regional Córdoba

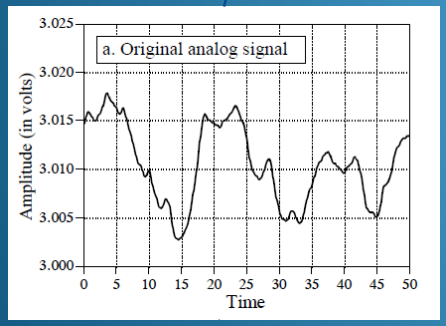
TECNICAS DIGITALES III

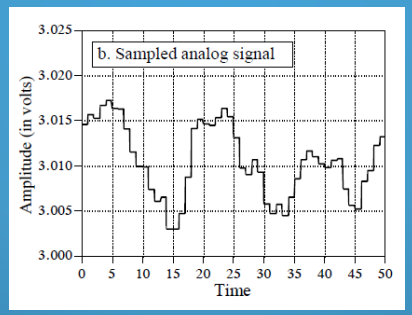
Conversor Analógico Digital

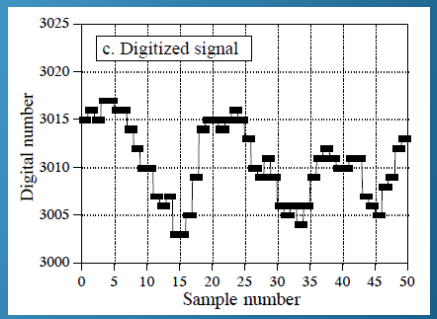


Conversor AD









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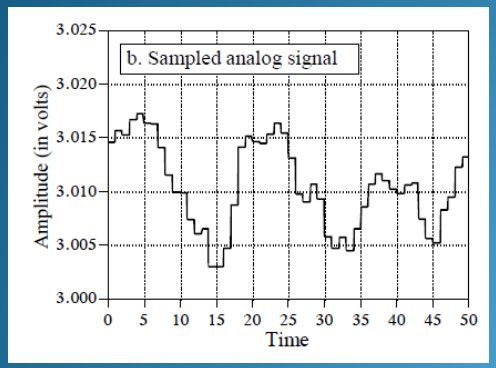

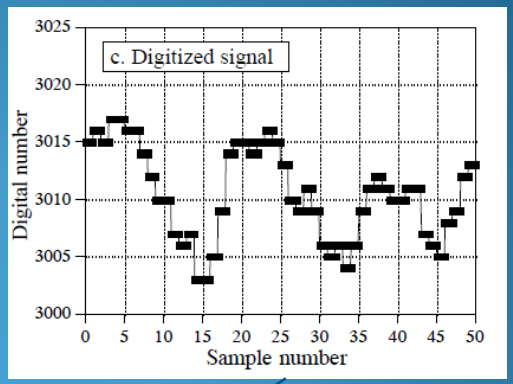

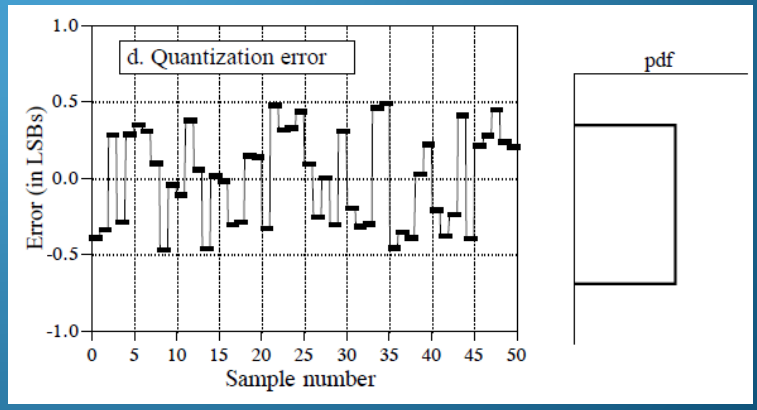

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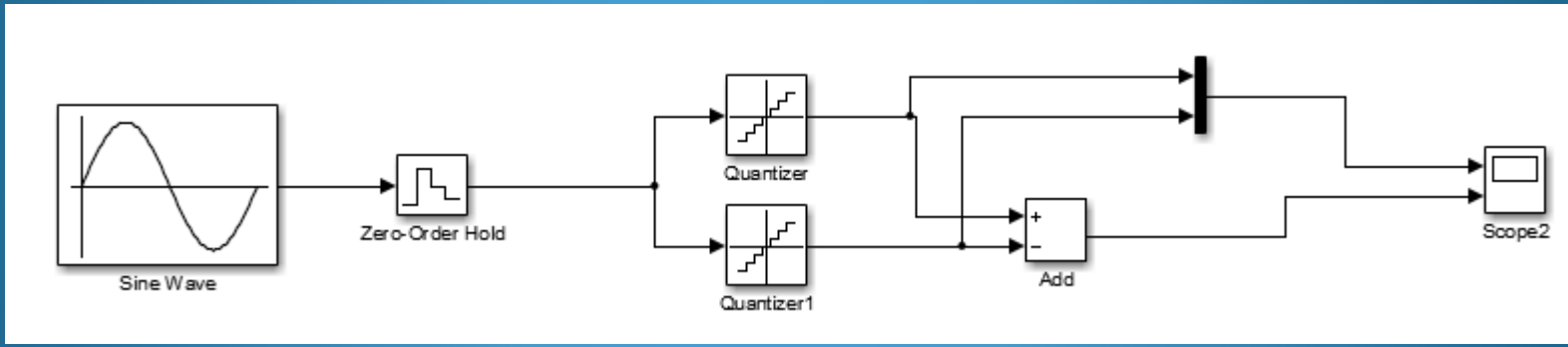
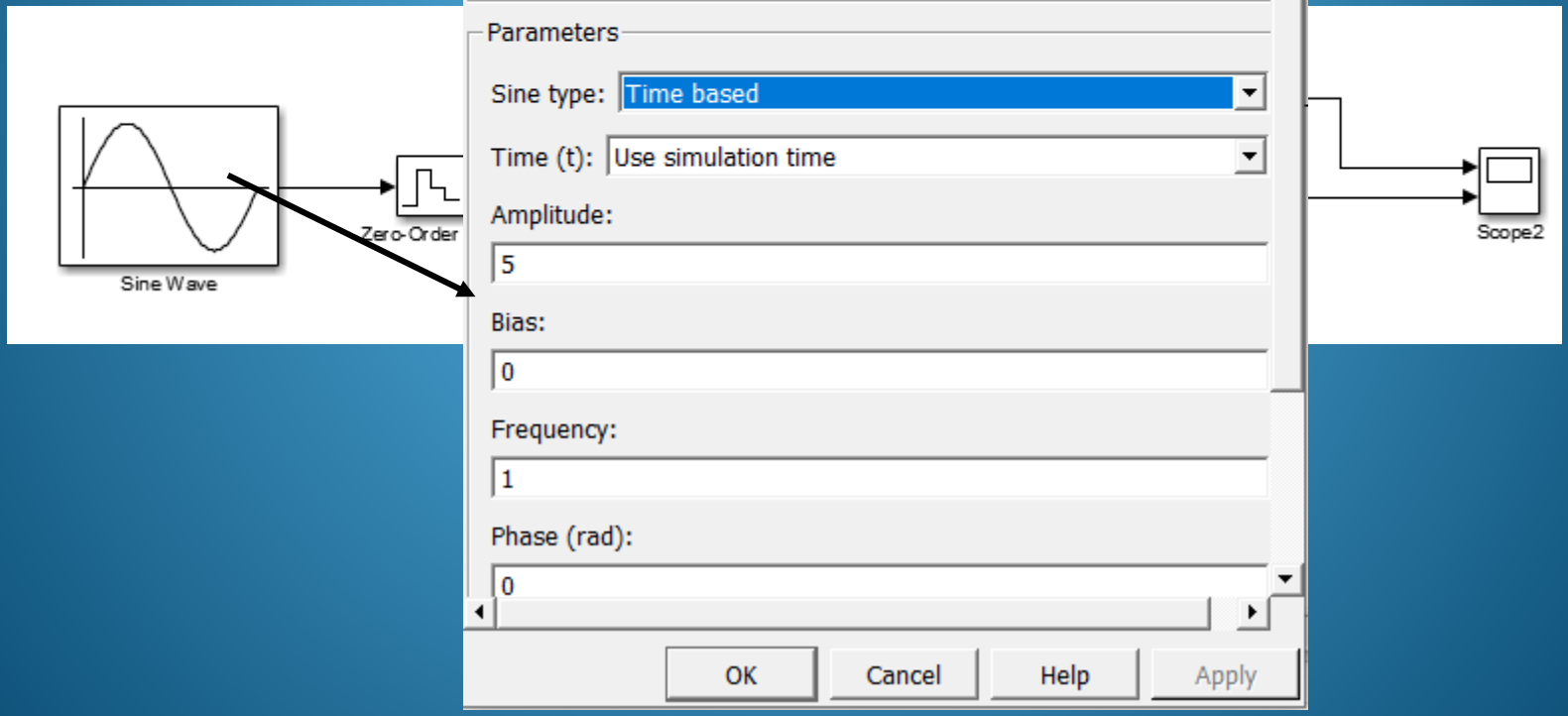
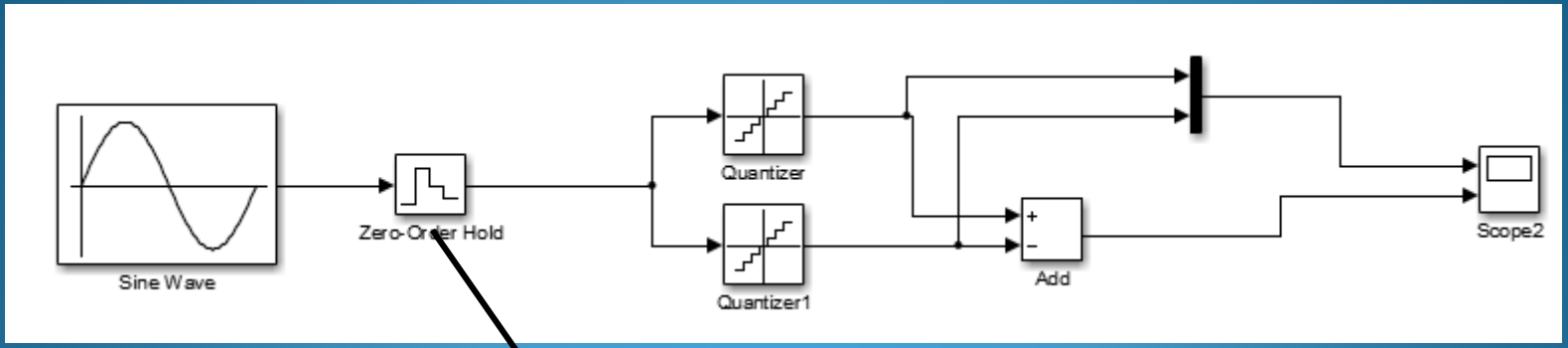
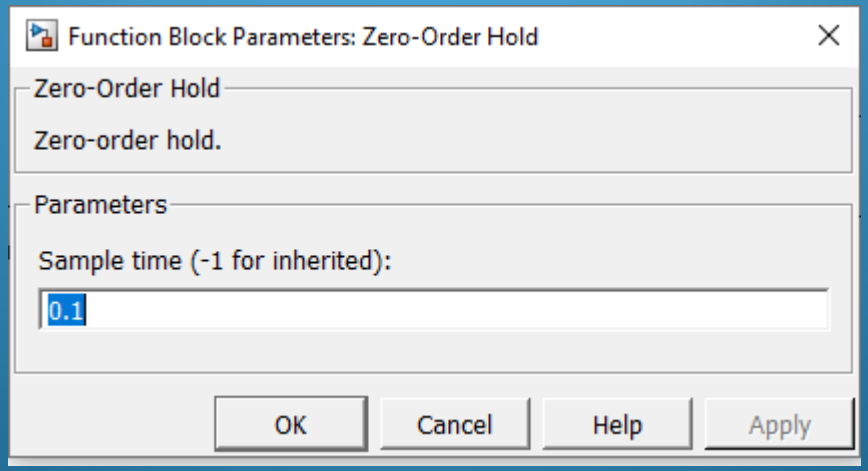



Source Block Parameters: Sine Wave
Sine Wave
Output a sine wave:
O(t) = Amp*Sin(Freq*t+Phase) + Bias
Sine type determines the computational technique used. The parameters in the two types are related through:
Samples per period = 2*pi / (Frequency * Sample time)
Number of offset samples = Phase * Samples per period / (2*pi)
Use the sample-based sine type if numerical problems due to running for large times (e.g. overflow in absolute time) occur.
Parameters
Sine type: Time based
Time (t): Use simulation time
Amplitude:
5
Bias:
0
Frequency:
1
Phase (rad):
0
OK
Cancel
Help
Apply
Sine Wave
Zero-Order
Scope2

Conversor AD





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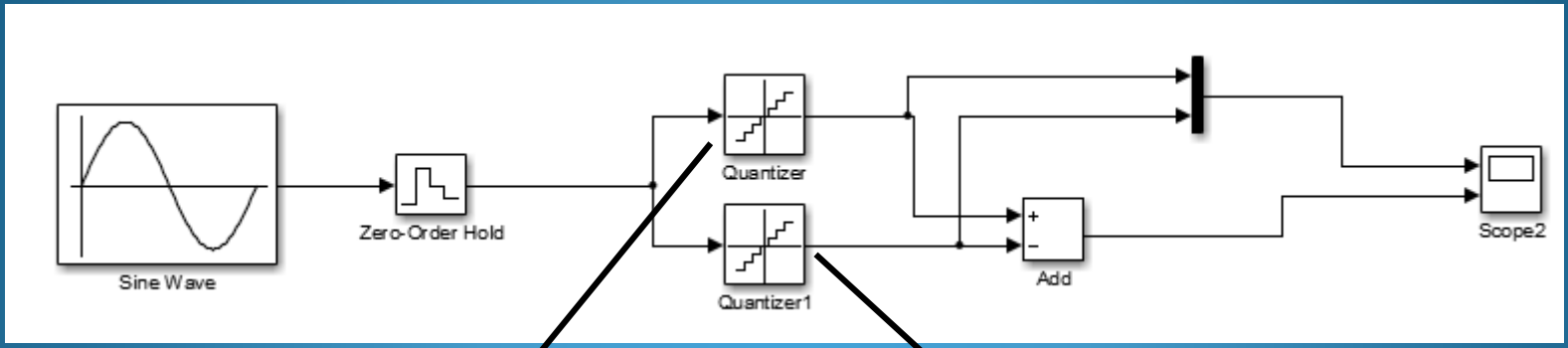
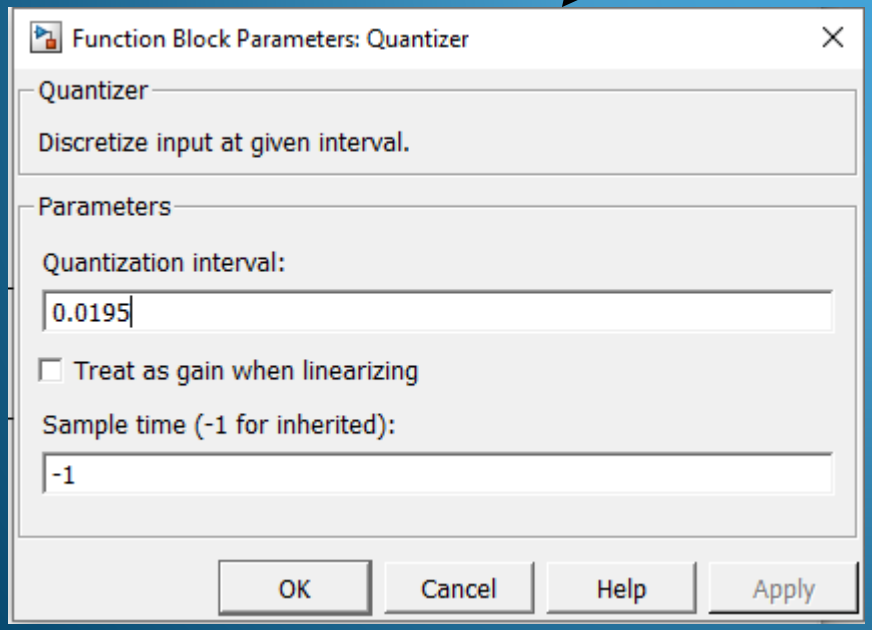
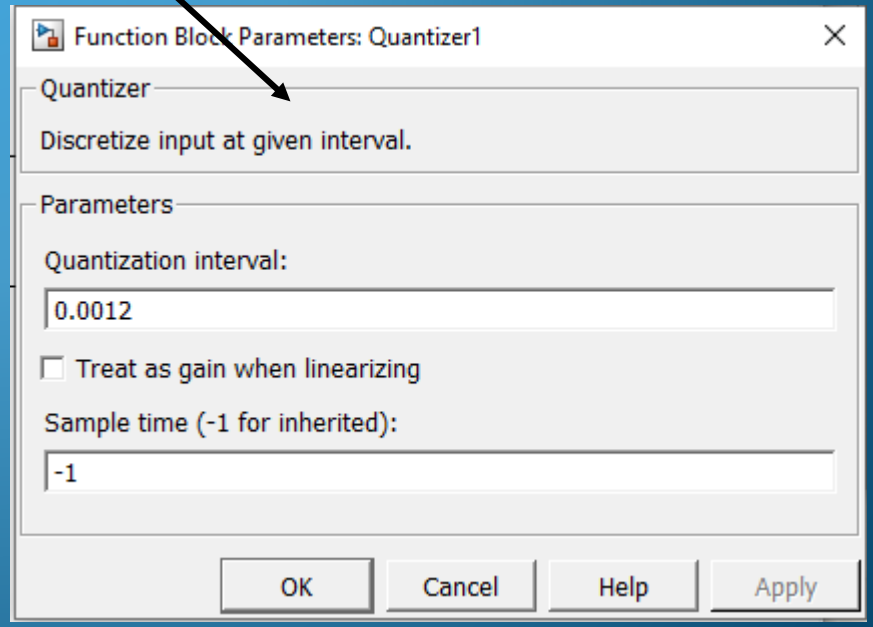
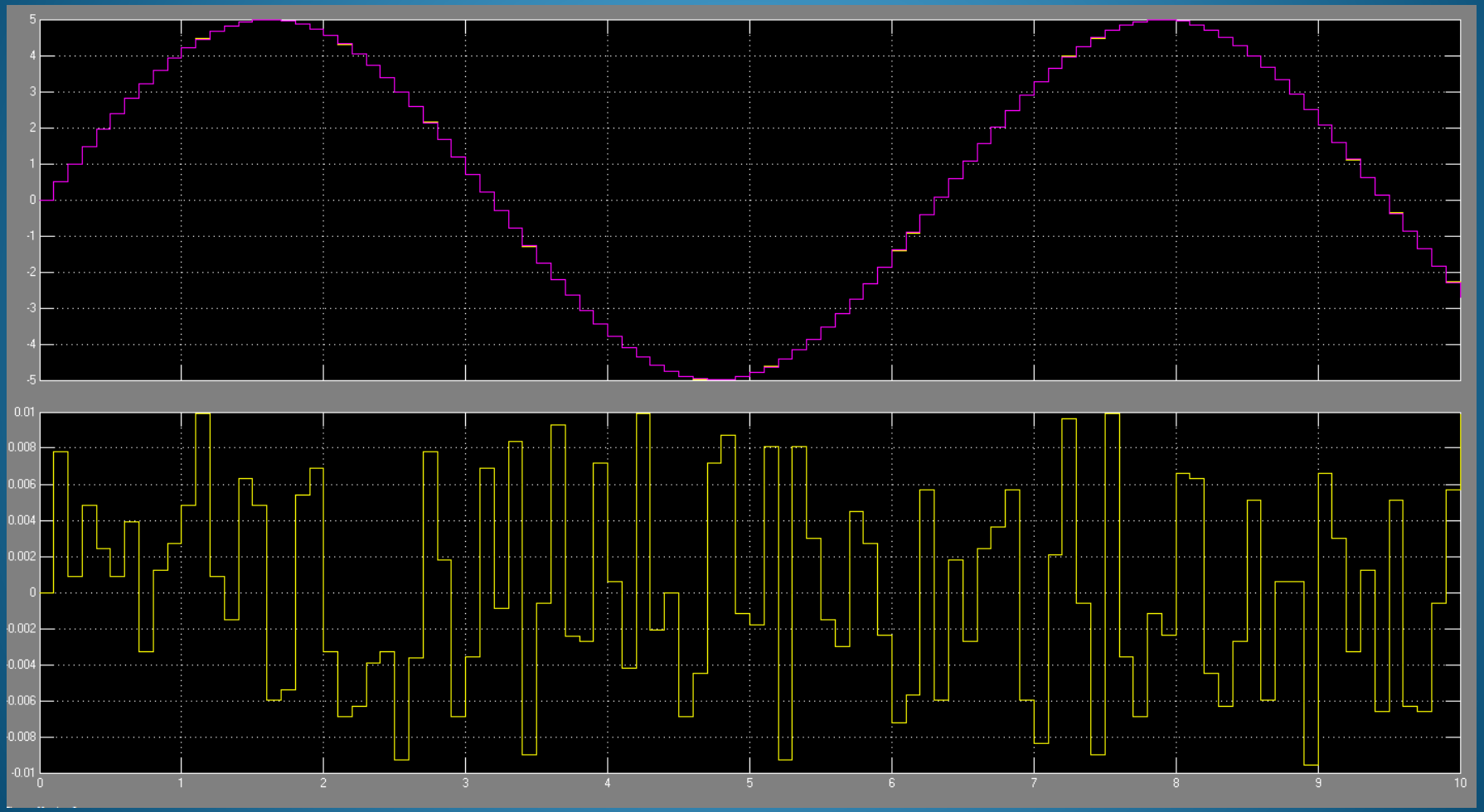




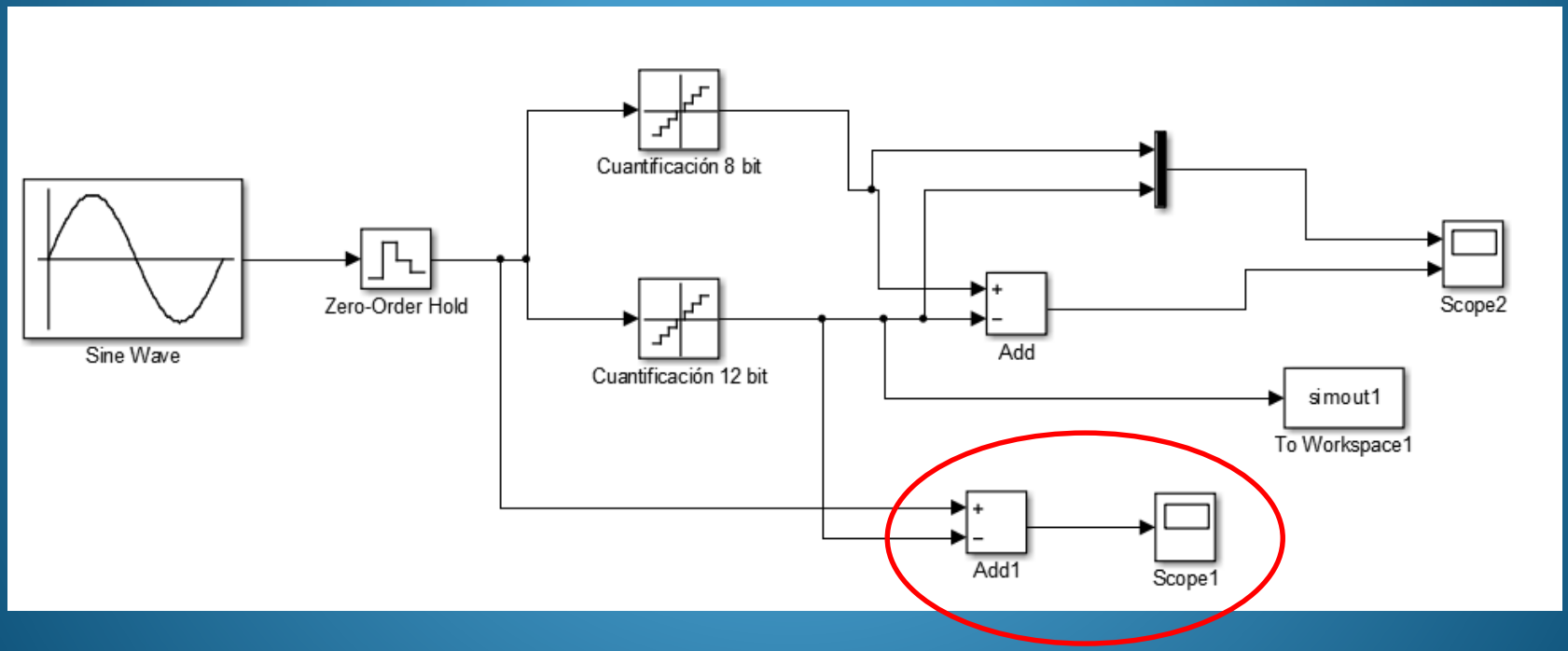


Conversor AD



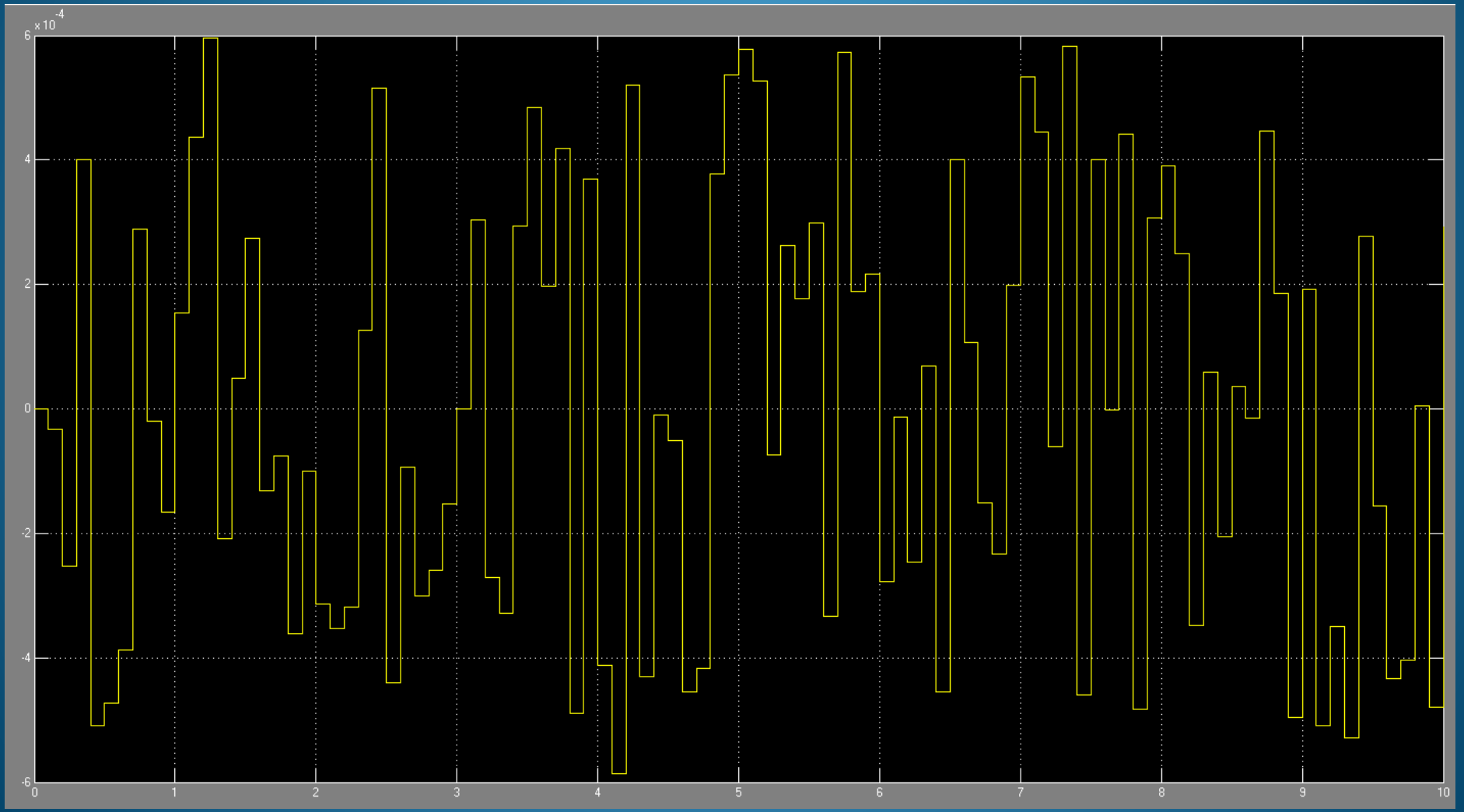
Error de cuantificación 12 bit

Para una señal de 5V el paso es de 0,0012V o 1.2mV.



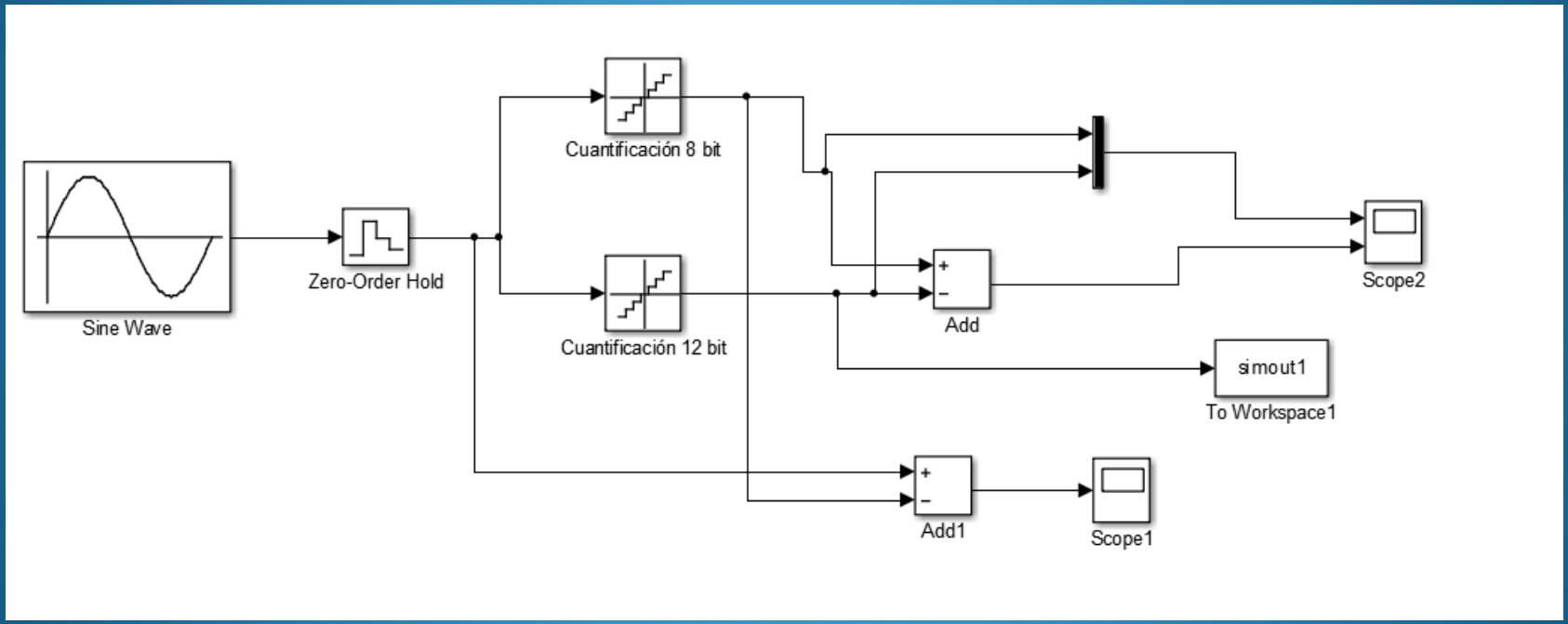
Error para cuantificación de 12 bits

El error se presenta como un ruido blanco

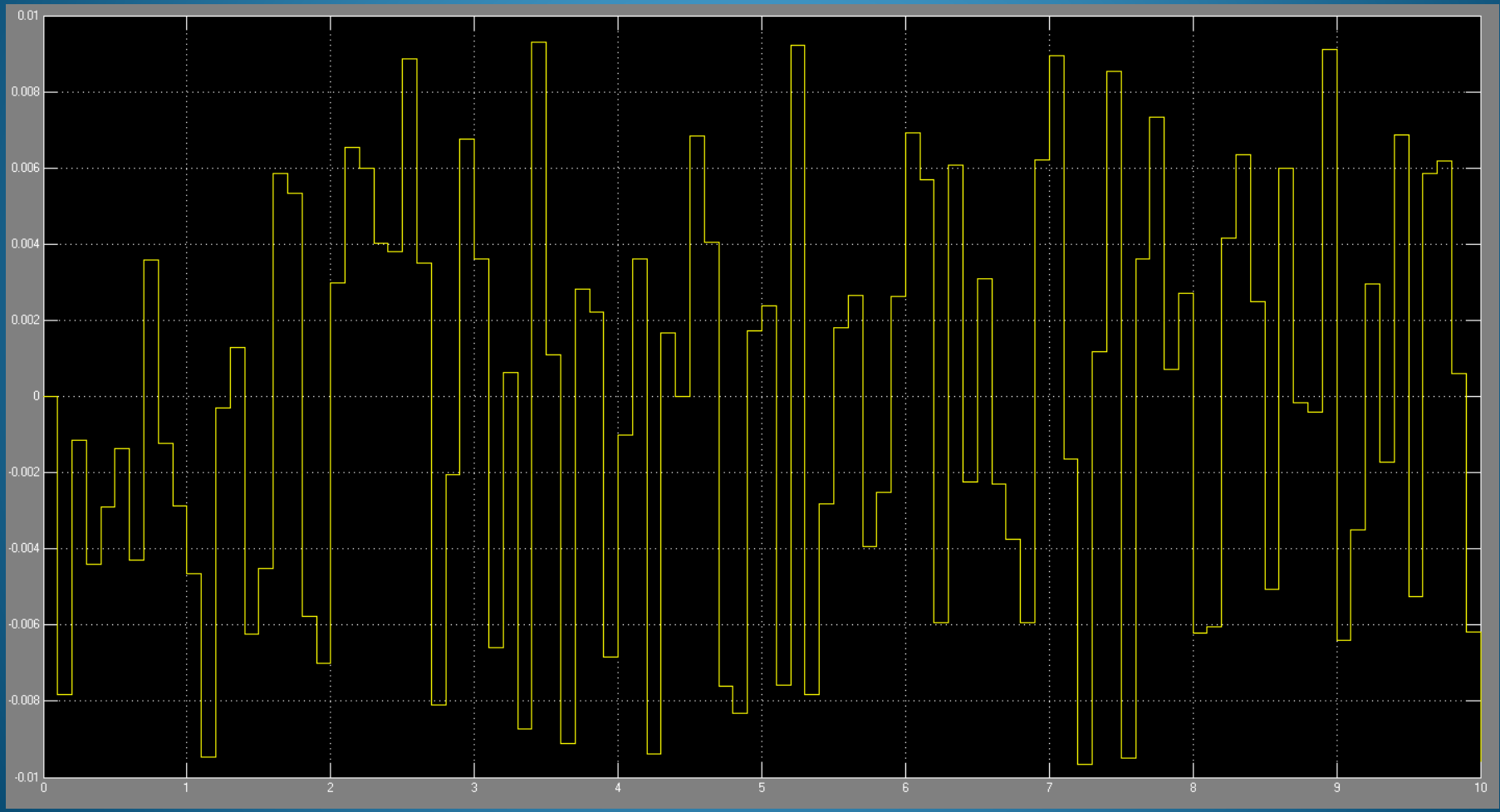


Error de cuantificación 8 bit

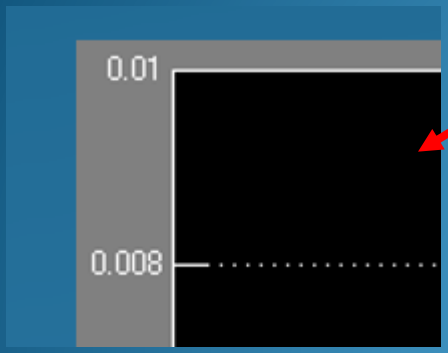
Para una señal de 5V el paso es de 0,0195V o 19,5mV.

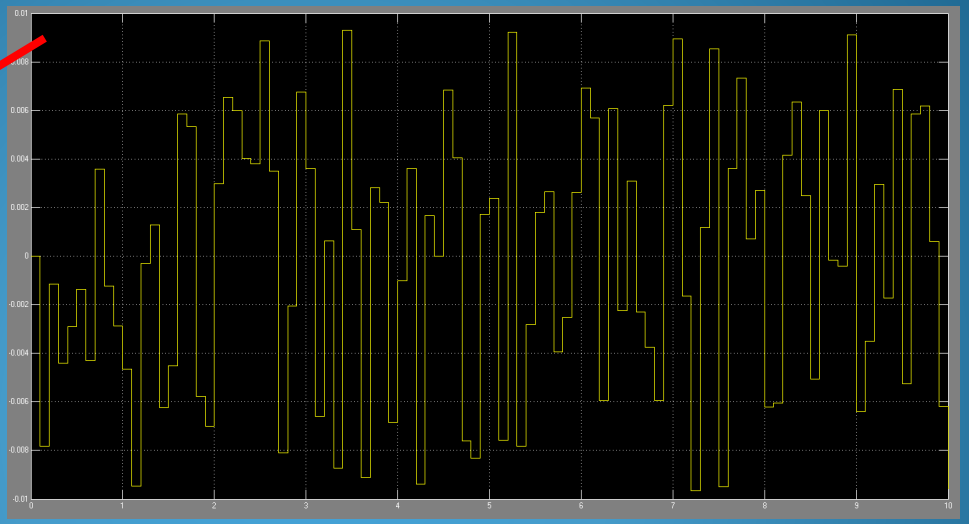


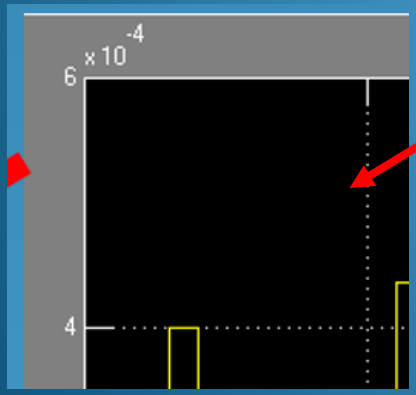
Error para cuantificación de 8 bits

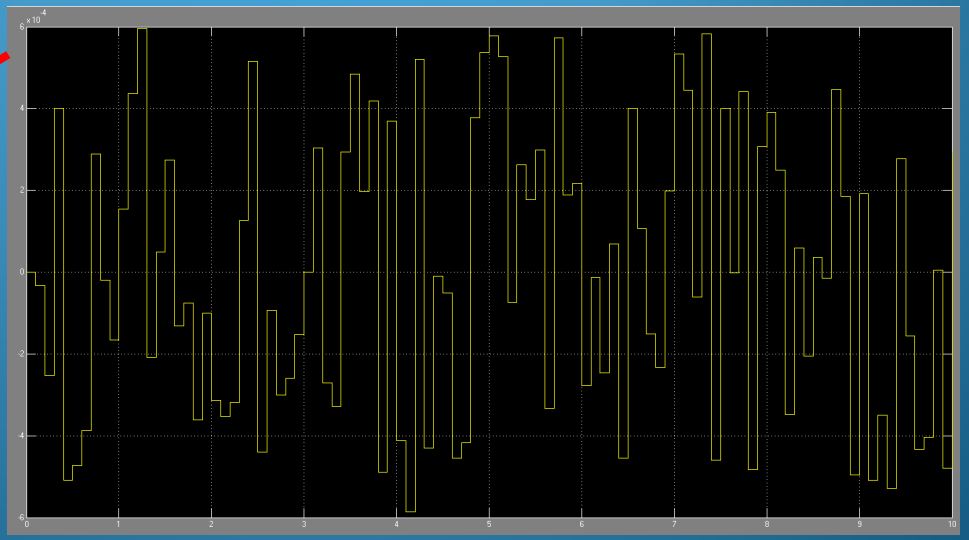


Error para cuantificación de 8 bits

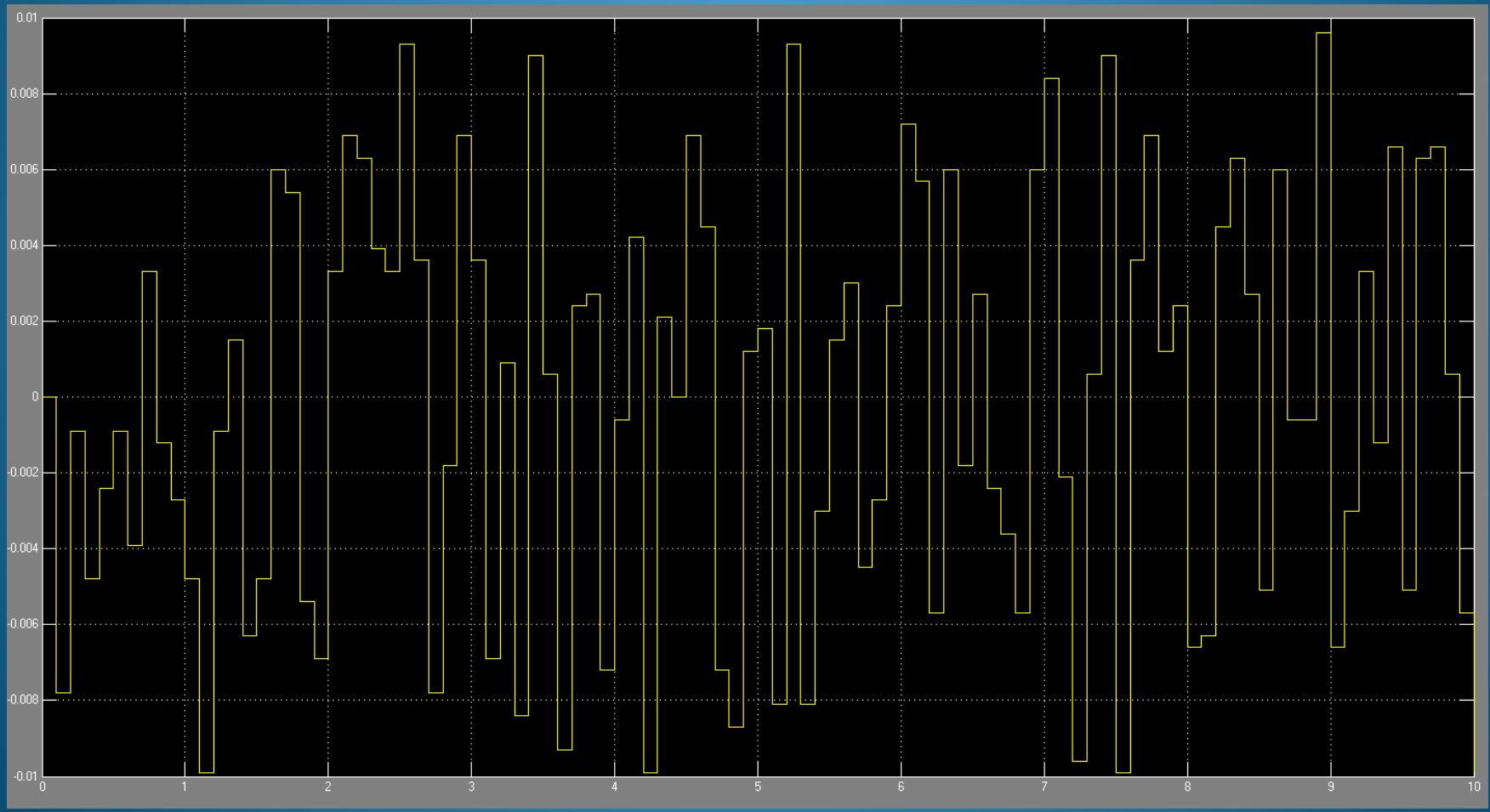




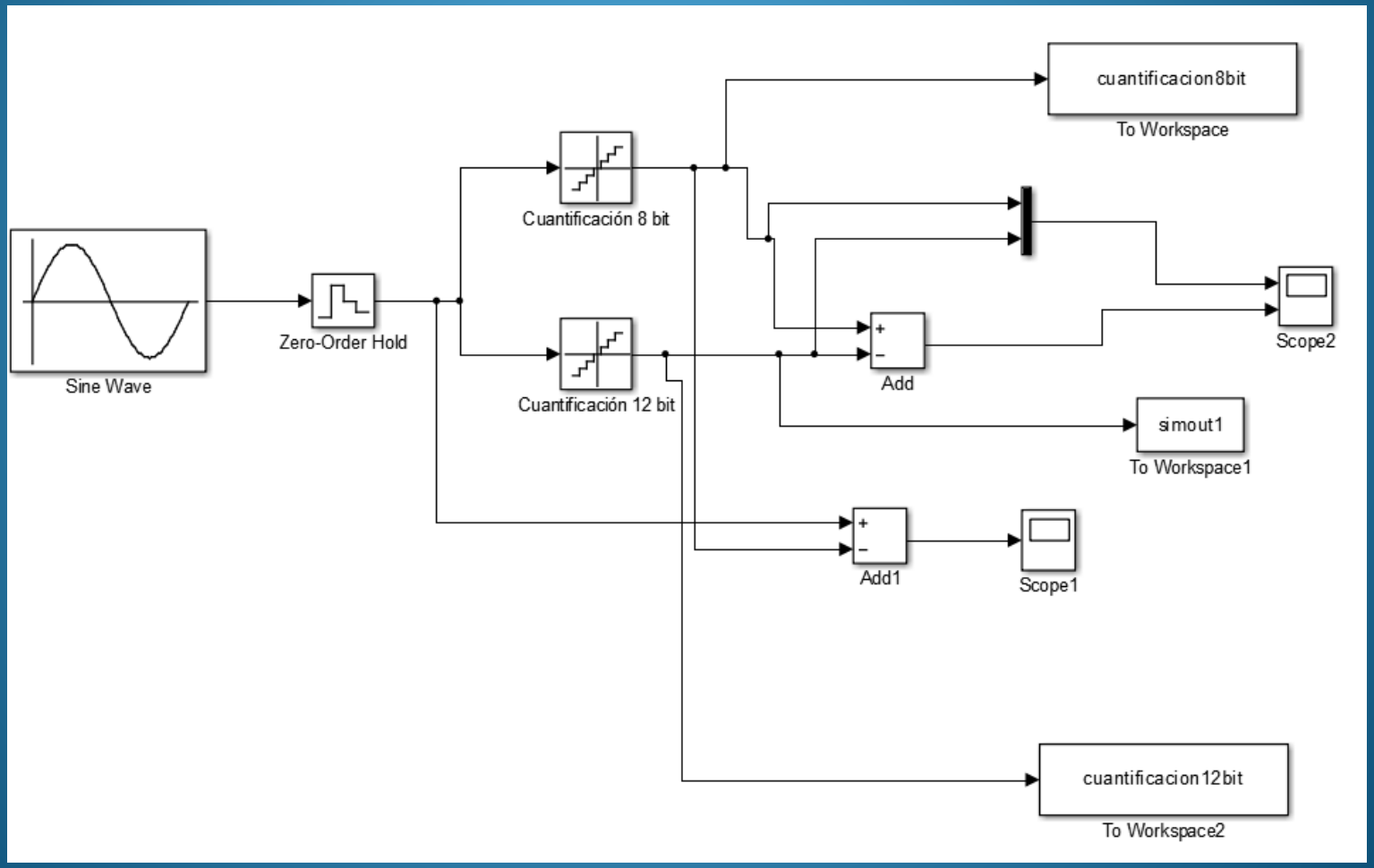




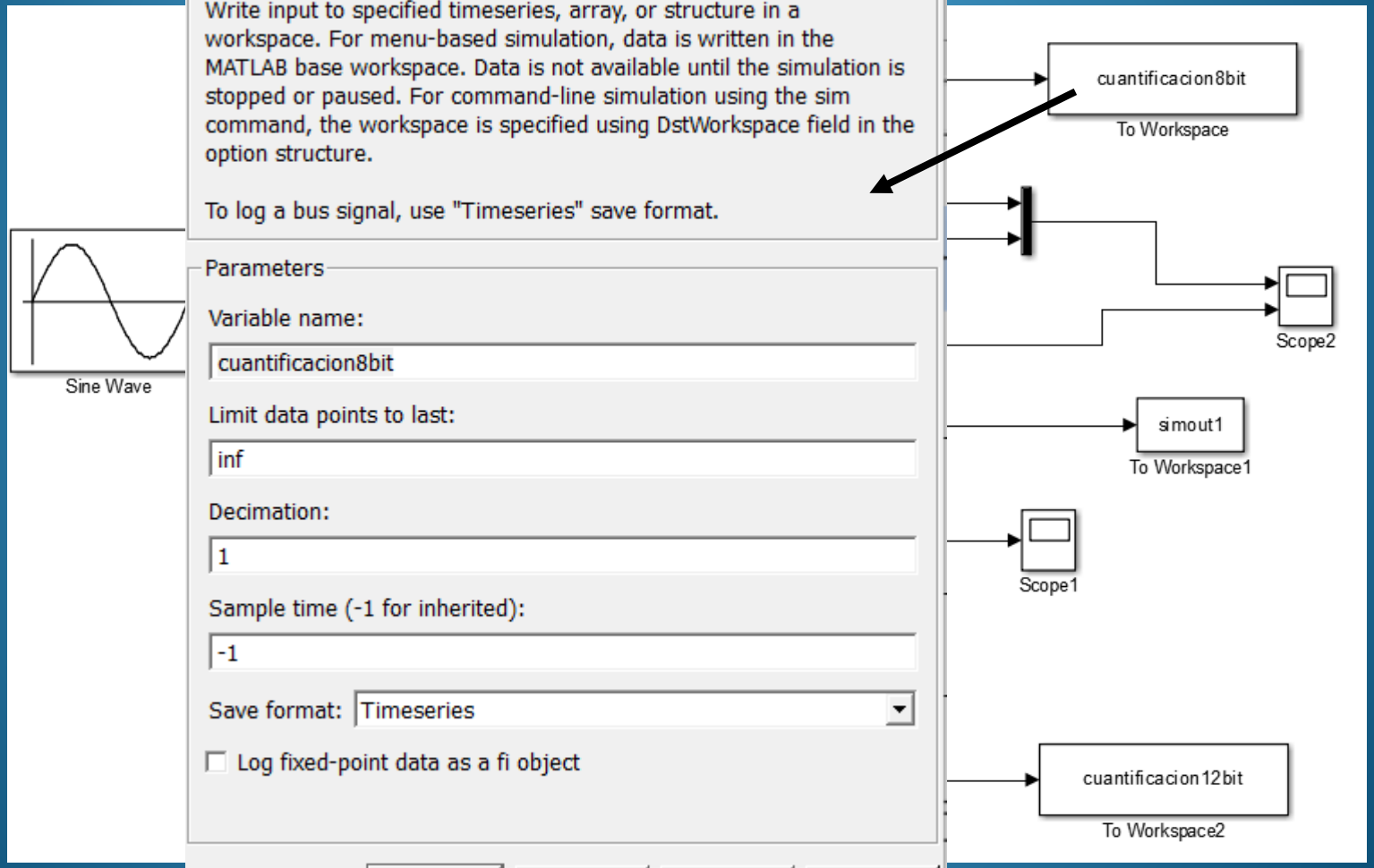
Diferencia entre los errores de cuantificación



Valores numéricos de la cuantificación



Valores numéricos de la



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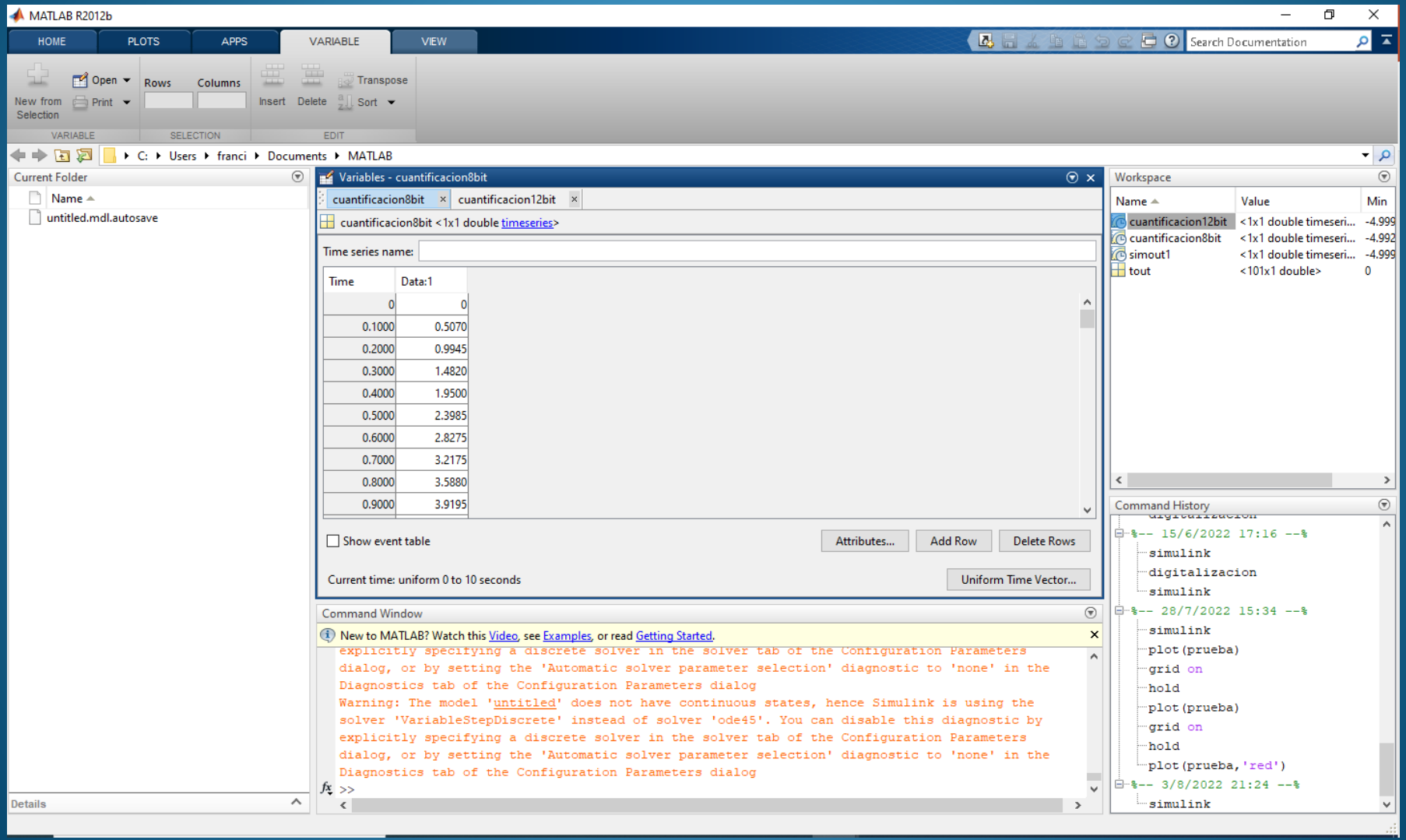

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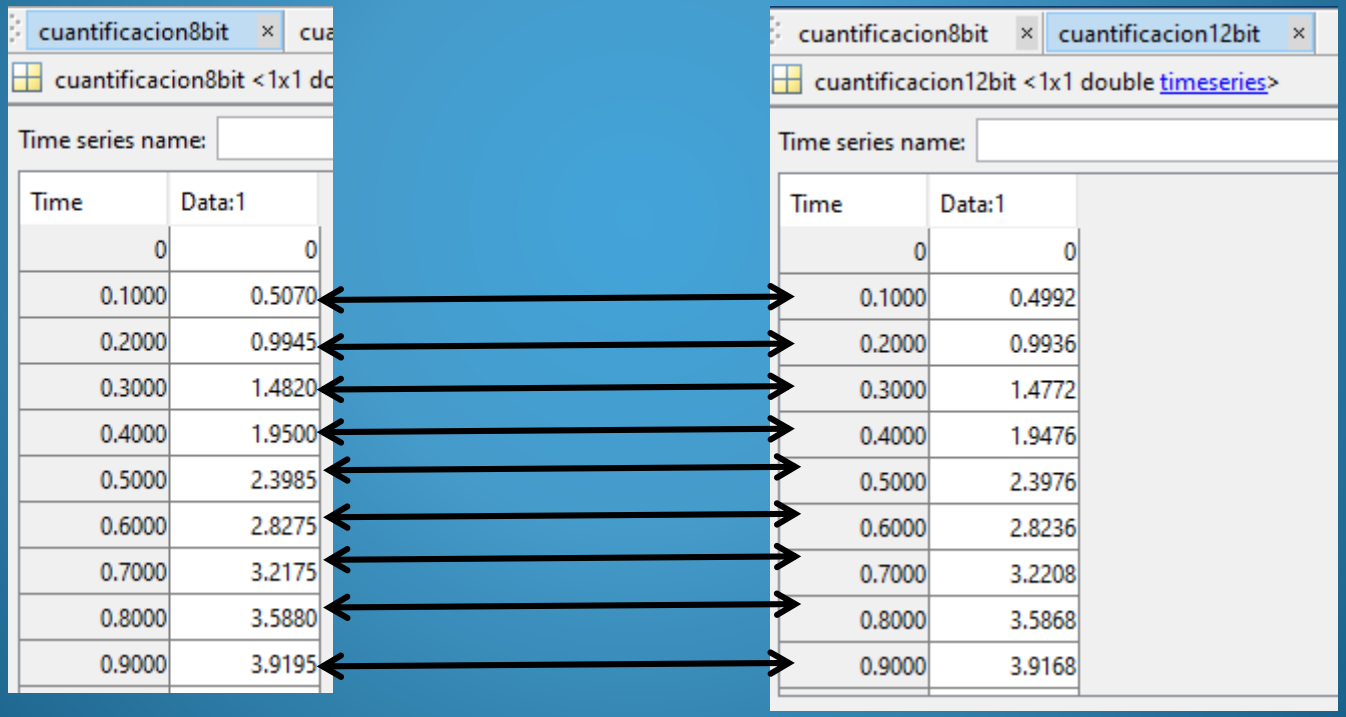
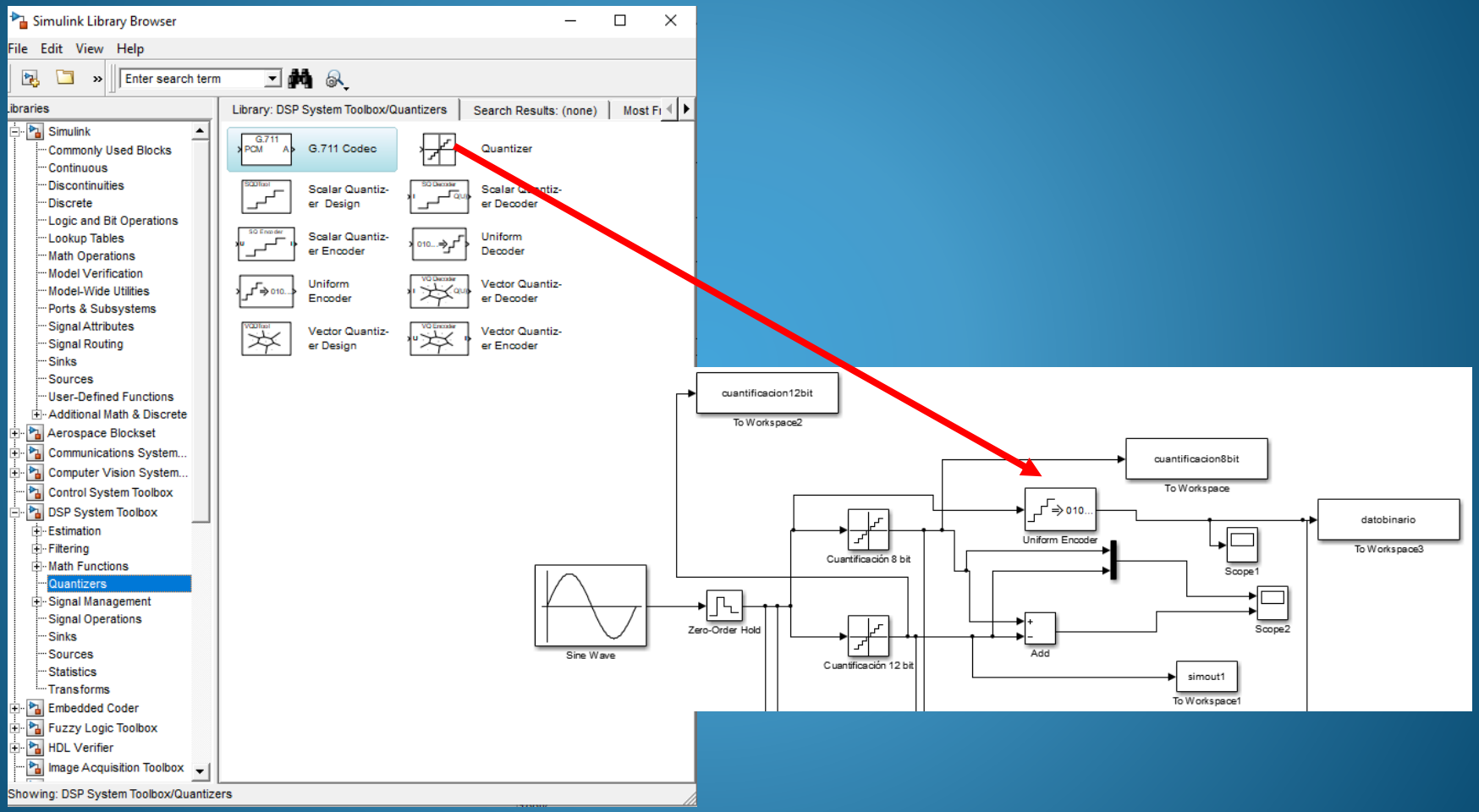
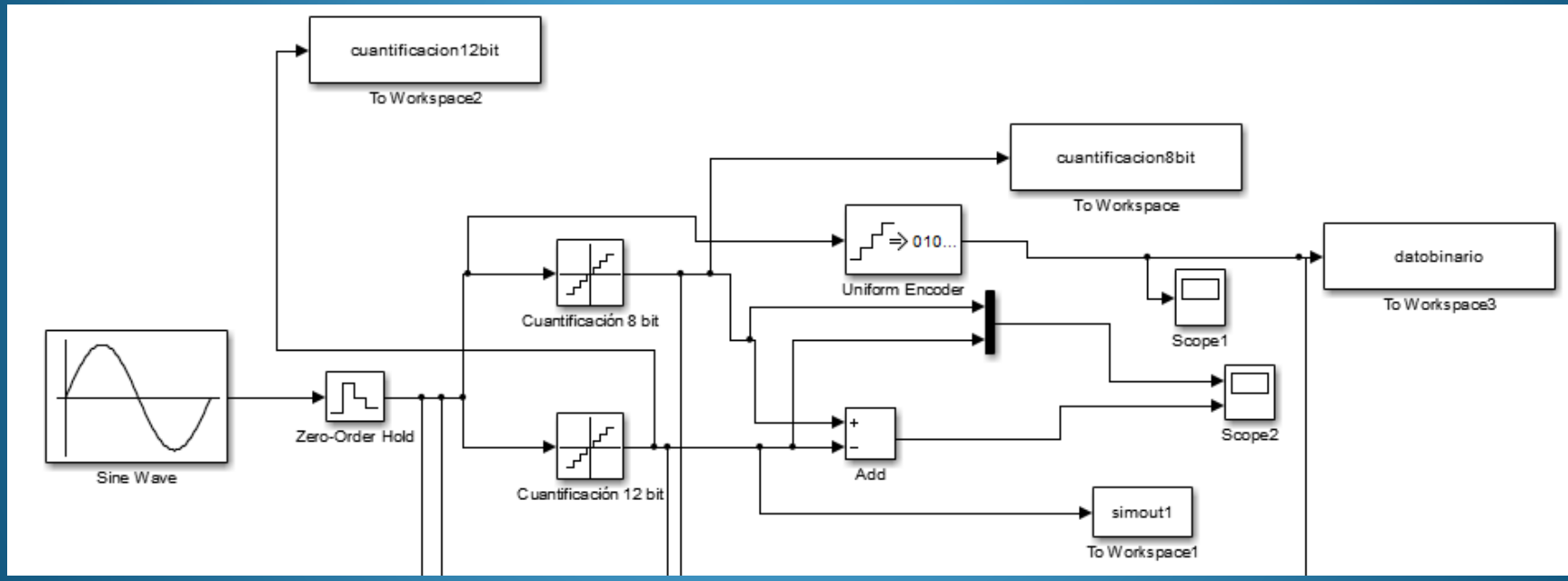


Biblioteca DPS

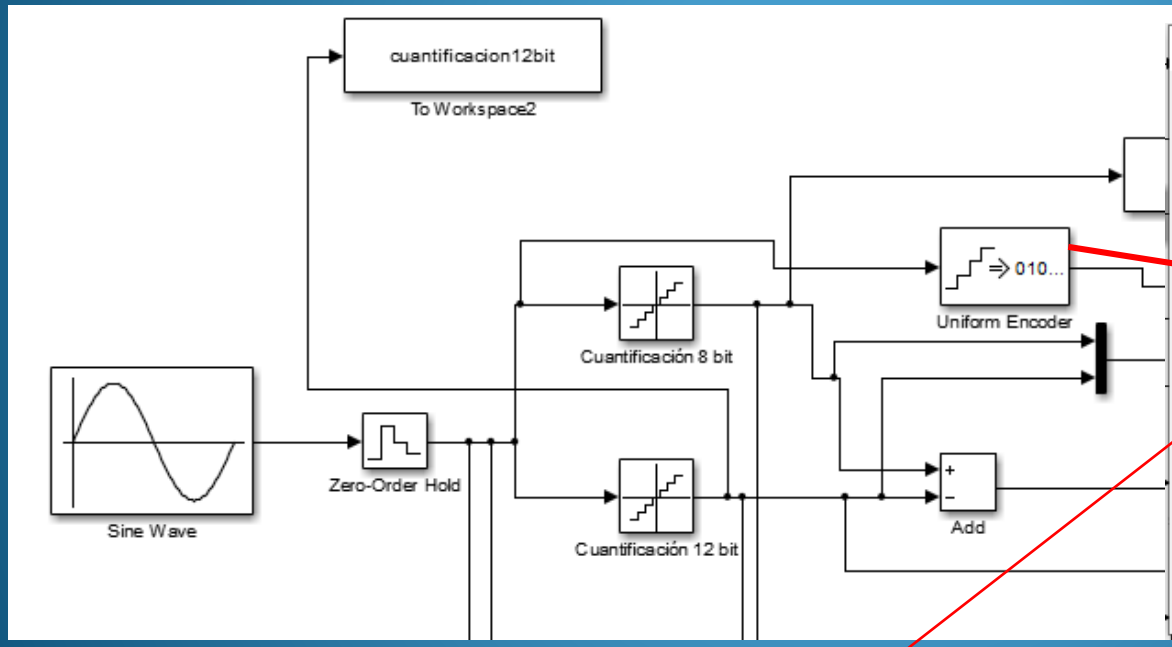


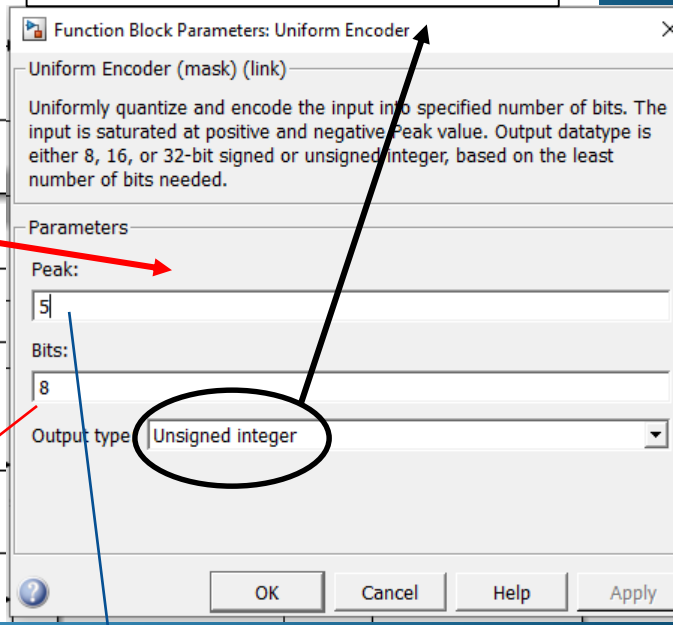
Cuantificación con la biblioteca DSP



Cuantificación con la biblioteca DSP

Que numero muestra con signo?

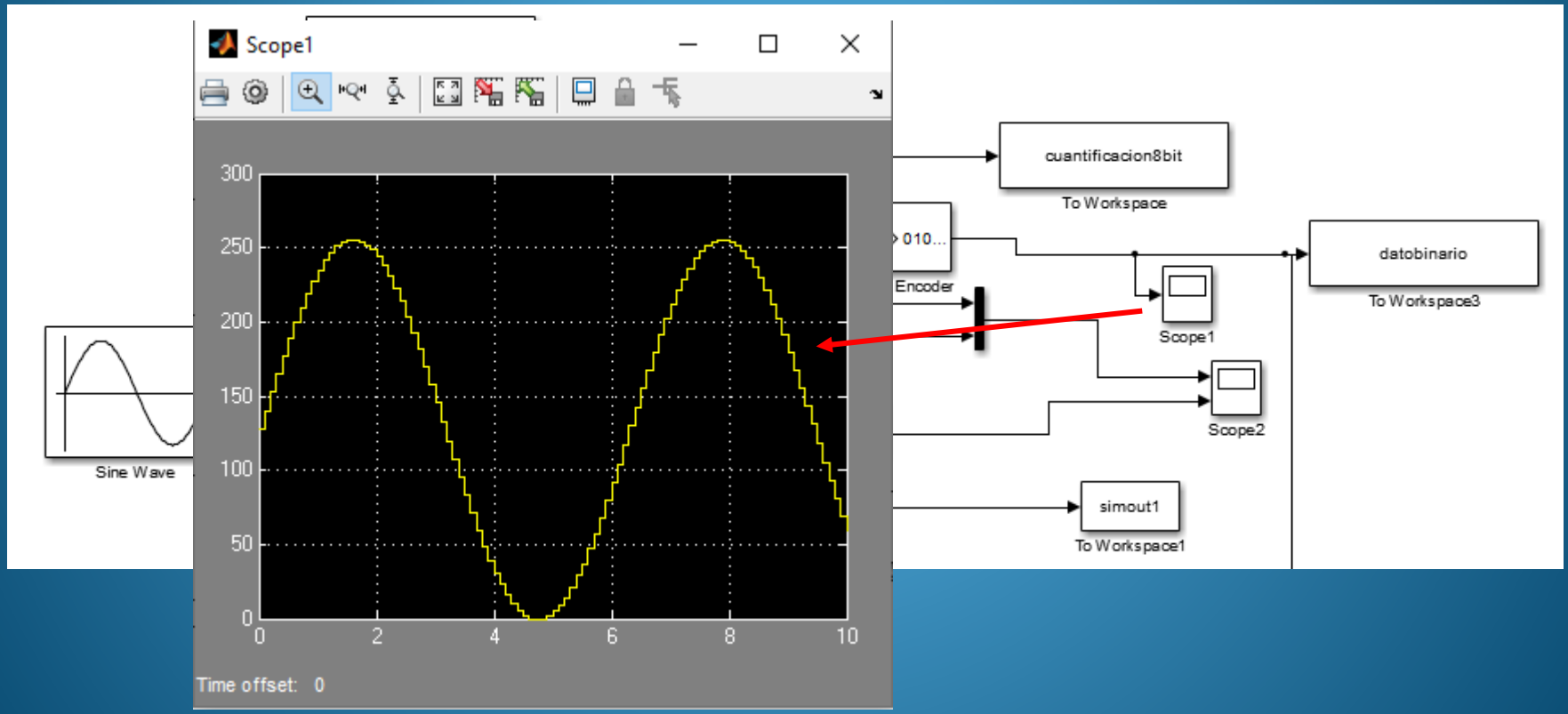




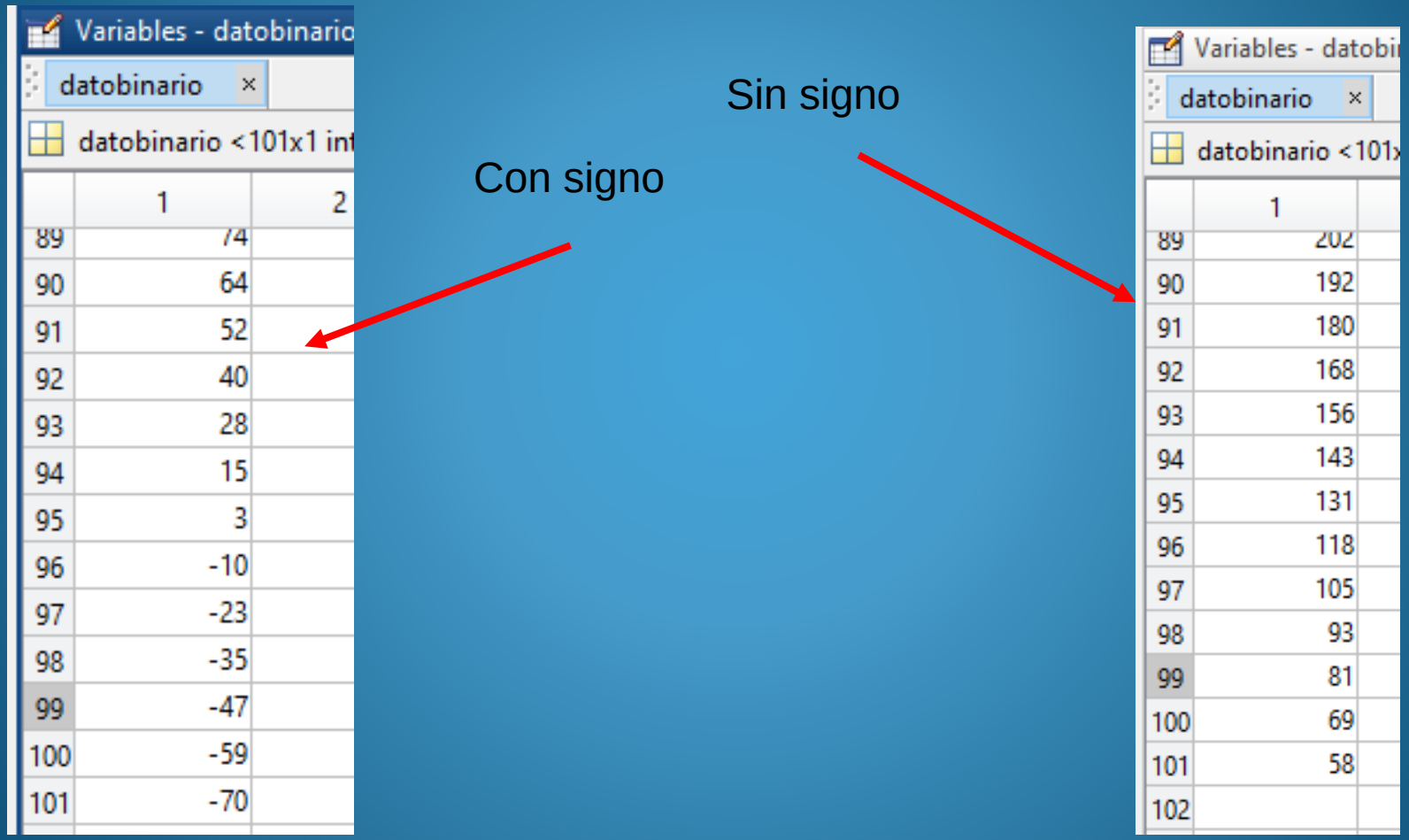
Numero de Bits

Máxima tensión

Cuantificación de 8 bits con la librería DSP



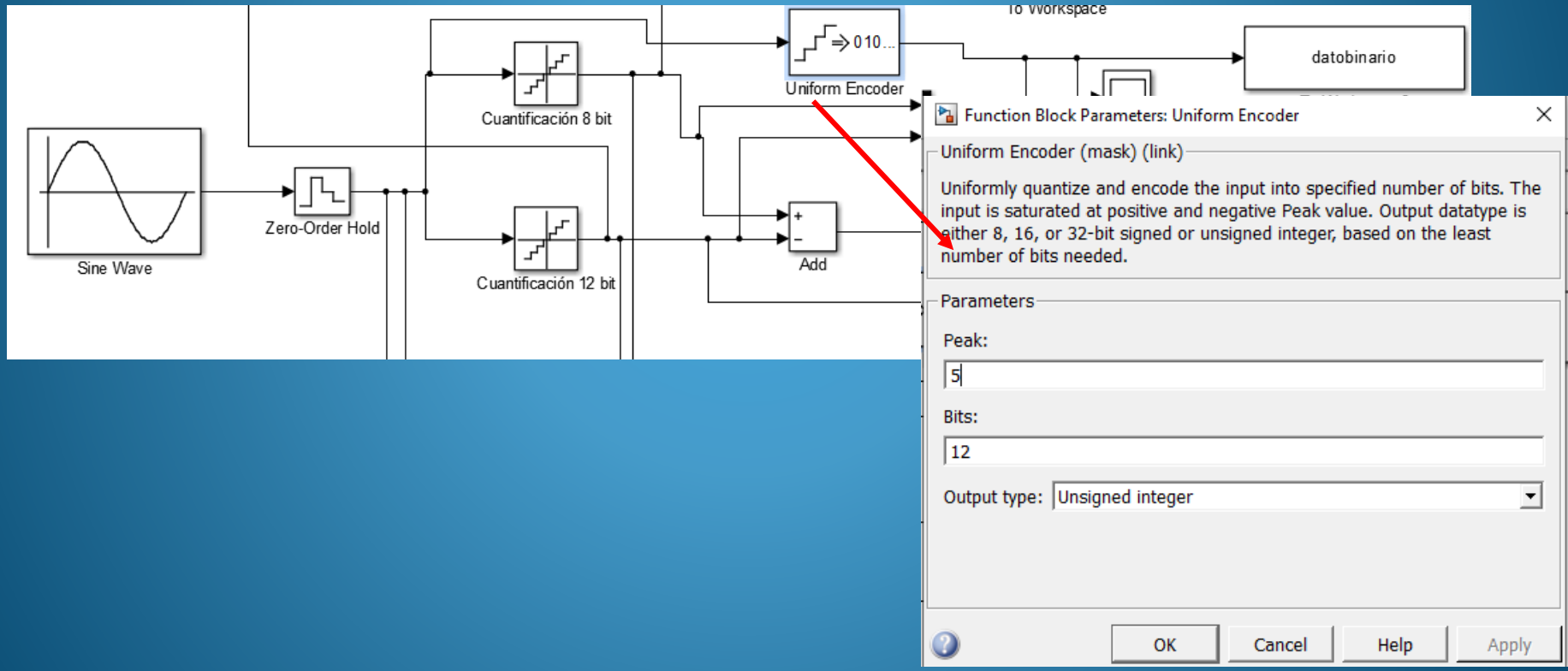
Cuantificación Dato binario de 8 bits



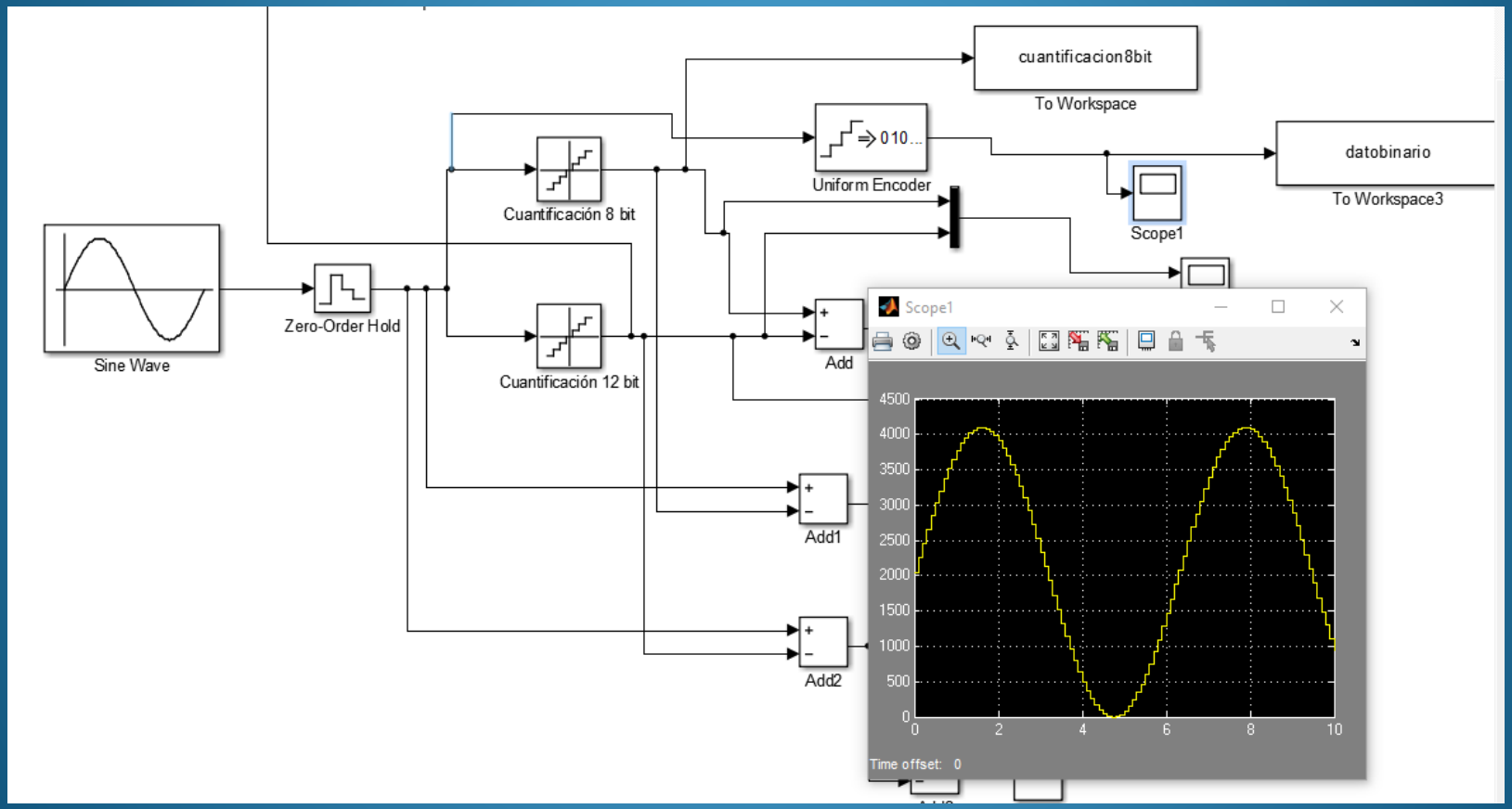
	1	2
89	74	
90	64	
91	52	
92	40	
93	28	
94	15	
95	3	
96	-10	
97	-23	
98	-35	
99	-47	
100	-59	
101	-70	

	1
89	202
90	192
91	180
92	168
93	156
94	143
95	131
96	118
97	105
98	93
99	81
100	69
101	58
102	

Cuantificación de 12 bits



Cuantificación de 12 bits



Cuantificación de 12 bits

Con signo

Sin signo

Variables - datobinario

datobinario

datobinario <101x1 int

	1	2
89	1197	
90	1026	
91	844	
92	653	
93	456	
94	254	
95	50	
96	-154	
97	-358	
98	-557	
99	-751	
100	-938	
101	-1115	
102		

bin 1111 1011 1010 0101

Variables - datobina

datobinario

datobinario <101x1

	1
89	3245
90	3074
91	2892
92	2701
93	2504
94	2302
95	2098
96	1894
97	1690
98	1491
99	1297
100	1110
101	933
102	

bin 0000 0011 1010 0101