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Raw Sensor Input & Cleaning  
(Per-sensor calibration)

Sensor	Wavelet	Level	Threshold Mode
humidity	db8	5	soft
temp_envi	db4	3	hard
temp_water	db4	3	hard
tds	db4	4	soft
ec	db4	4	soft
lux	db4	4	soft
ppfd	db4	4	soft
reflect_445	sym8	6	garrote
reflect_480	sym8	6	garrote
ph	db4	4	soft

$\Sigma$   
Signal Decomposition  
(Multi-level wavelet decomposition)

Wavelet/Level

Threshold Mode

G  $\begin{bmatrix} 2 & 0 \\ 8 & 1 \end{bmatrix}$

Wavelet Transform  
(Discrete Wavelet Transform)  
• Daubechies (db4/db8)  
• Symlet (sym8)

G  $\begin{bmatrix} 2 & 0 \\ 8 & 2 \end{bmatrix}$

Thresholding  
(Noise reduction)  
• Soft thresholding  
• Hard thresholding  
• Garrote thresholding

$\Sigma$   
Signal Reconstruction  
(Inverse DWT)

Output for Machine Learning  
Reconstructed Signal  
(Cleaned time-series data)