Noise quantization via possibilistic filtering
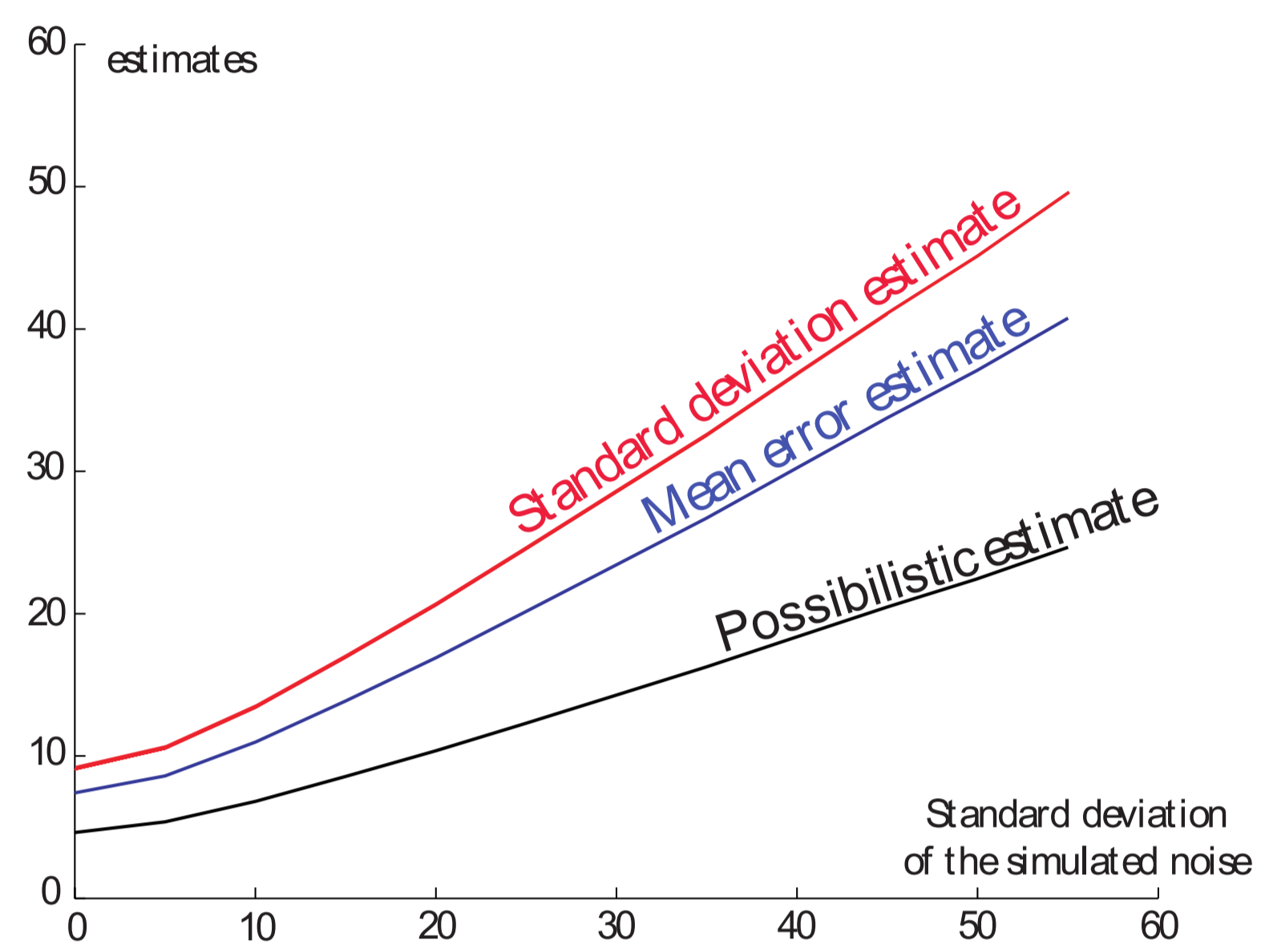
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Experiment with simulated noise
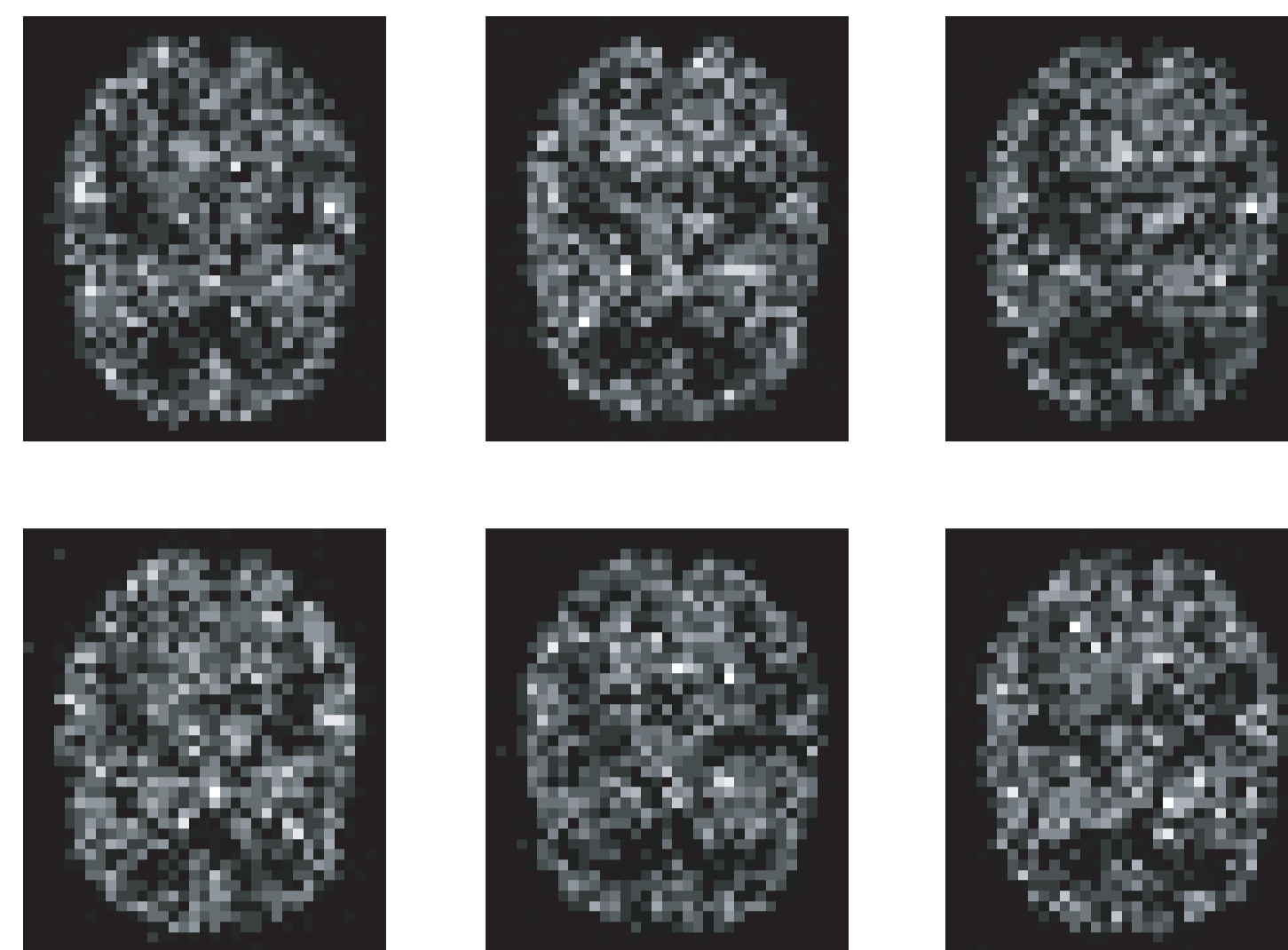
Images of Lena with simulated Gaussian noise with standard deviations of 0, 30 and 60.
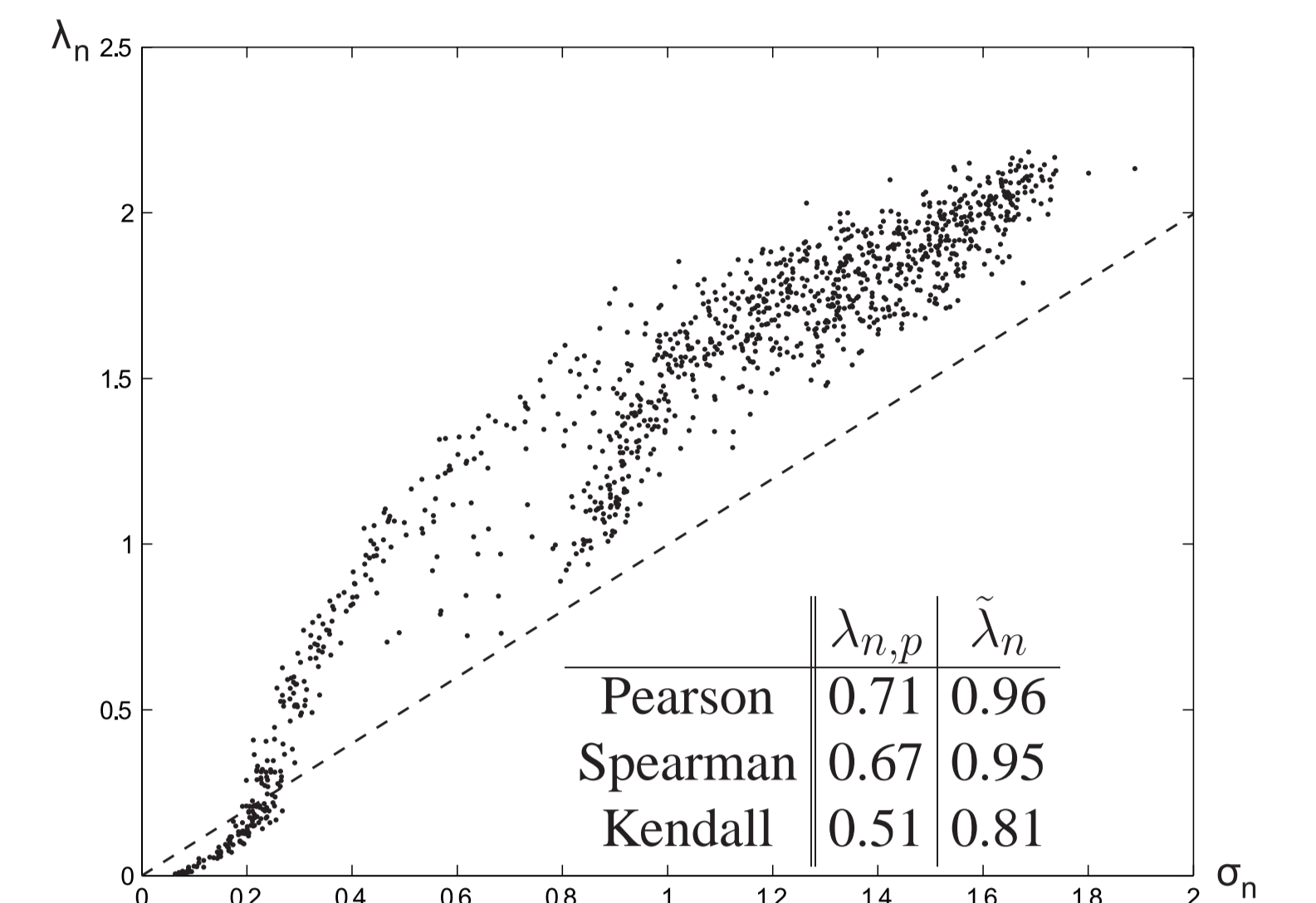
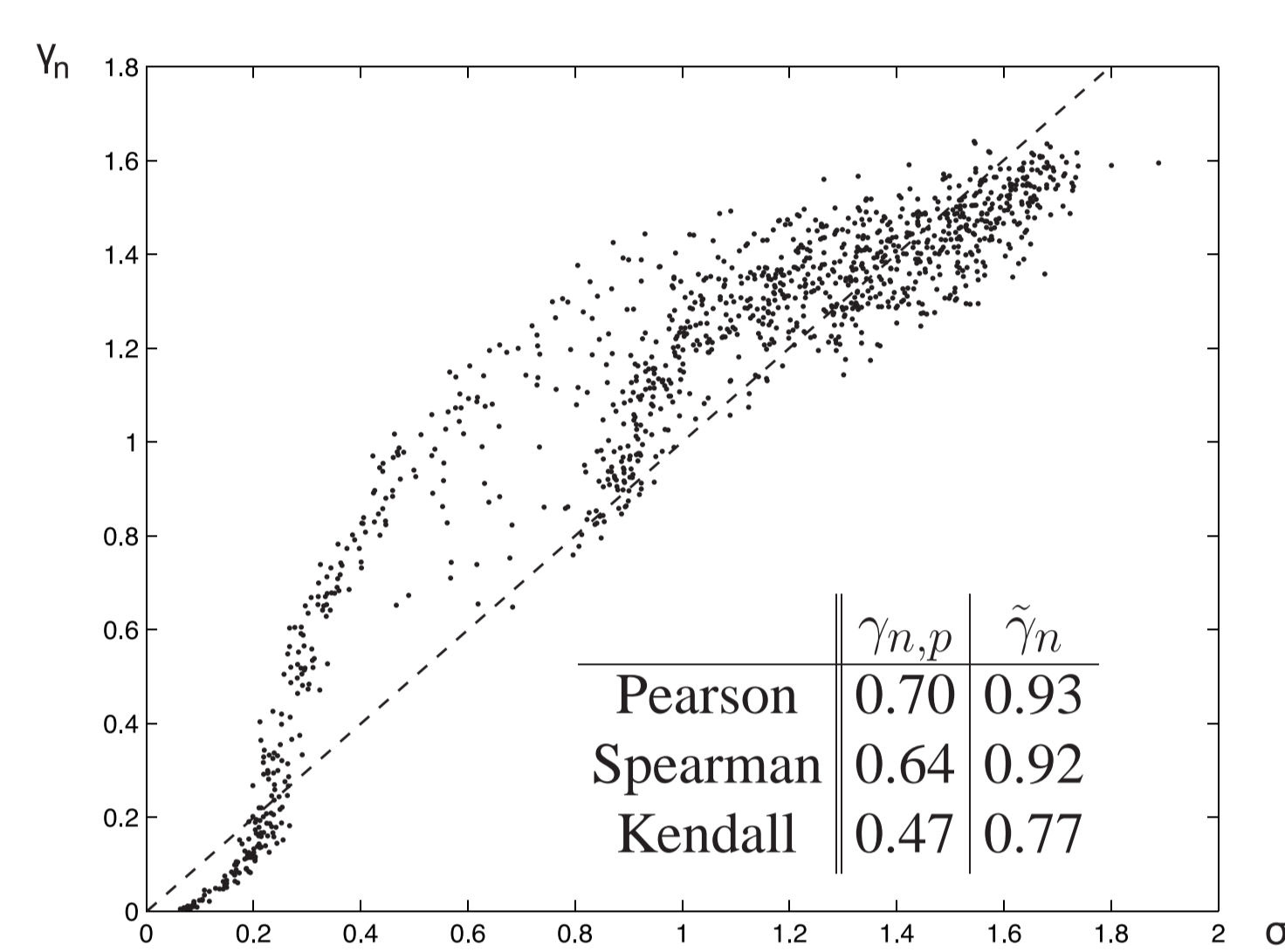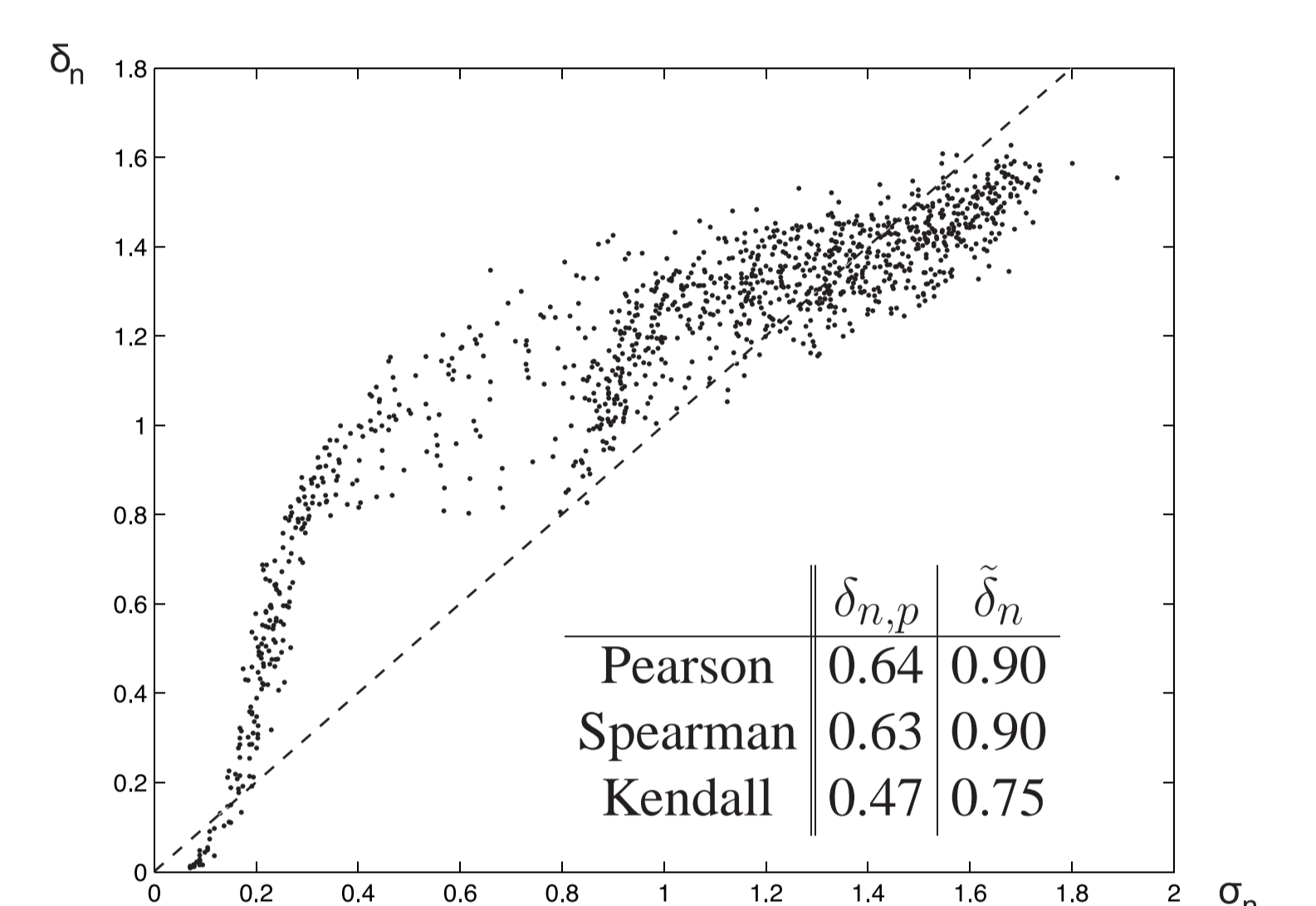Usual and possibilistic local estimates of the noise level.

Experiment with real noise

Six images of the 1000 HBP direct acquisitions.

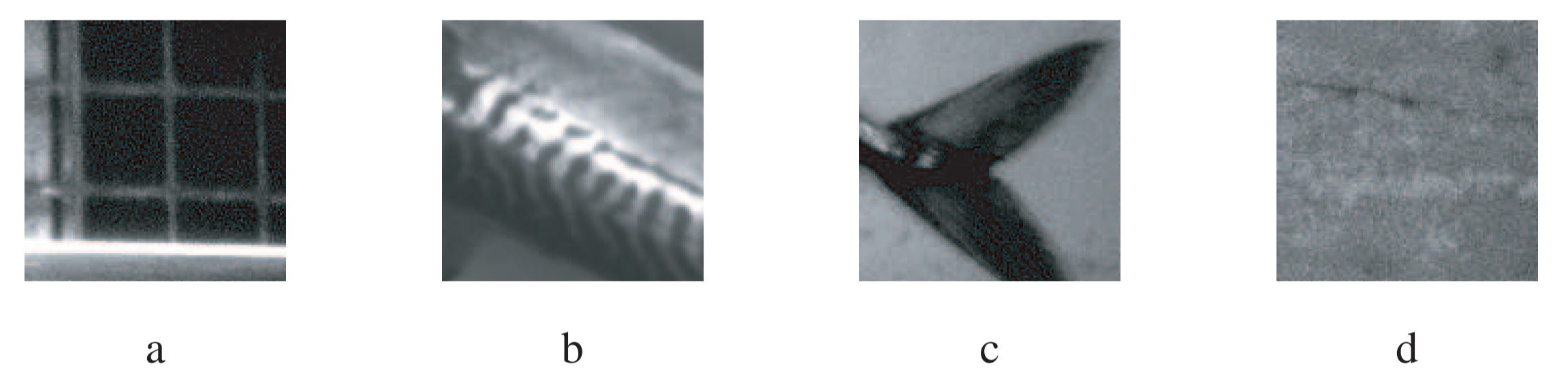Possibilistic estimate with triangular kernel.

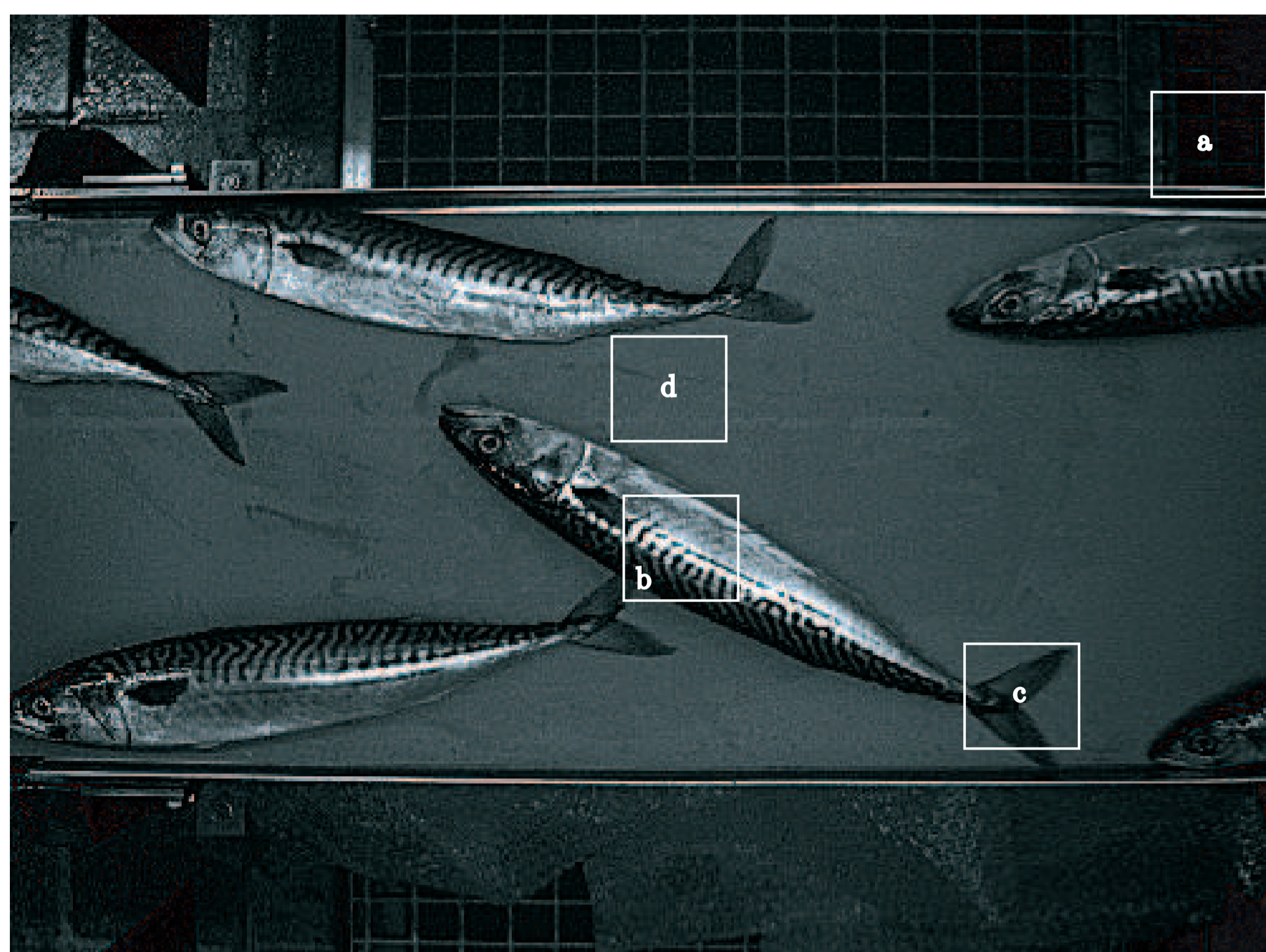|	$\lambda_{n,p}$	$\tilde{\lambda}_n$
Pearson	0.71	0.96
Spearman	0.67	0.95
Kendall	0.51	0.81

	$\gamma_{n,p}$	$\tilde{\gamma}_n$
Pearson	0.70	0.93
Spearman	0.64	0.92
Kendall	0.47	0.77

Standard deviation estimates with uniform kernel.

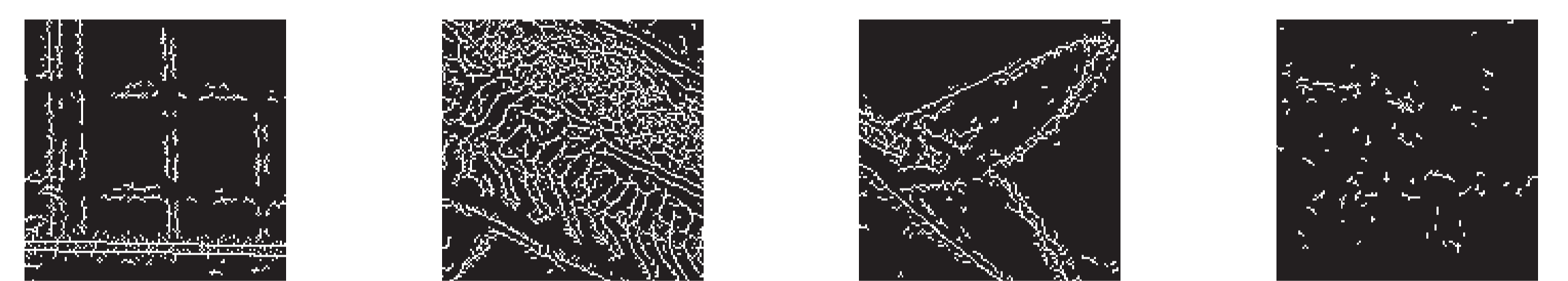|	$\delta_{n,p}$	$\tilde{\delta}_n$
Pearson	0.64	0.90
Spearman	0.63	0.90
Kendall	0.47	0.75

Standard deviation estimates with gaussian kernel.

Experiment of edge detection with gradient filtering

Approach by Canny-Deciche filtering with low thresholds $s_l = 4$ and $s_h = 6$.

Approach by Canny-Deciche filtering with medium (optimal) thresholds $s_l = 13$ and $s_h = 16$.

Approach by Canny-Deciche filtering with high thresholds $s_l = 28$ and $s_h = 30$.

Approach by possibilistic filtering with no threshold (automatic thresholding)

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