

```

85 % Plot graphs of thresholding and enhancement functionio
1 86 if graphs
87     showGraphs(j,alpha,tMin,tMax,sigma,egagTable,res)
88 end
89
90 % Start timer for measuring execution time of image e
< 0.01 1 91 tic;
92
93 % Compute the natural logarithm of the image to separ
0.03 1 95 inImg = log(inImg+eps);
96
97 % ----- DWT -----
0.11 1 98 [hpChannels lpChannels] = dwt(inImg,j,sampl);
99 % -----
100
101 % ----- Soft thresholding -----
102 % The coefficients below describe the relations betwe
103 % deviation of the noise in the image and the respect
< 0.01 1 104 sigmaxCoeff = [0.7122 0.2828 0.1907 0.1472 0.1217];
< 0.01 1 105 sigmayCoeff = [0.3416 0.1946 0.1468 0.1194 0.1012];
106
1 107 for level = 1:floor(j/2)
0.03 2 108     hpChannels{level}(:, :, 1) = softThresl(hpChannels{1
109         tMax, tMin, sigmaxCoeff(level)*sigma, alpha,
0.03 2 110     hpChannels{level}(:, :, 2) = softThresl(hpChannels{1
111         tMax, tMin, sigmayCoeff(level)*sigma, alpha,
2 112 end
113 % -----
114
115 % ----- Enhancement through Generalized Adaptiv
1 116 for iChannel = ceil(j/2):j
0.03 3 117     M1 = max(abs(reshape(hpChannels{iChannel}(:, :, 1),
0.02 3 118     M2 = max(abs(reshape(hpChannels{iChannel}(:, :, 2),
0.03 3 119     hpChannels{iChannel}(:, :, 1) = M1*lookUp(egagTable,
120         hpChannels{iChannel}(:, :, 1)/M1);
0.03 3 121     hpChannels{iChannel}(:, :, 2) = M2*lookUp(egagTable,
122         hpChannels{iChannel}(:, :, 2)/M2);
3 123 end
124 % -----
125
126 % ----- IDWT -----
0.25 1 127 outImg = exp(idwt(hpChannels, lpChannels, sampl));
128 % -----
< 0.01 1 129 execTime = toc;
130
131 % ##### Help functions #####
132
133 % ----- DWT -----
134 function [hpChannels lpChannel] = dwt(img,numChannels
135 %DWT Frequency decomposition of 2D signal.
136 % [HP LP] = DWT(S,N,D) decomposes the signal into f
137 % according to the follow illustration:
138 %
139 %     |--HPx{1}
140 %     |
141 %     |--HPy{1}           |--HPx{N}

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