

```

142 %      |      |
143 %      S---|      |--HPY{N}
144 %      |      |
145 %      |--LP--- ... ---|
146 %      |      |
147 %      |      |--LP
148 %
149 %      S - Signal to be decomposed.
150 %      N - Number of channels to compute.
151 %      D - Downsample LP-component between channels.
152
153 % Filter coefficients for analyzing filters.
154 hx = [0.0625 0.25 0.375 0.25 0.0625];
155 gx = [0 1 -1];
156
157 lpChannel = img;
158
159 if(sampl)
160     for iChannel = 1:numChannels
161 %         hpChannels{iChannel}(:, :, 1) = mxSimpleDiff(
162 %         hpChannels{iChannel}(:, :, 2) = mxSimpleDiff(
163         hpChannels{iChannel}(:, :, 1) = imfilter(lpChan
164         hpChannels{iChannel}(:, :, 2) = imfilter(lpChan
165
166         lpChannel = imfilter(imfilter(lpChannel, hx, 'r
167         hx', 'replicate', 'conv'));
168         lpChannel = lpChannel(1:2:end, 1:2:end);
169     end
170 else
171     for iChannel = 1:numChannels
172 %         hpChannels{iChannel}(:, :, 1) = mxSimpleDiff(
173 %         2^(iChannel-1)-1);
174 %         hpChannels{iChannel}(:, :, 2) = mxSimpleDiff(
175 %         2^(iChannel-1)-1)';
176         hpChannels{iChannel}(:, :, 1) = imfilter(lpChan
177         hpChannels{iChannel}(:, :, 2) = imfilter(lpChan
178
179         lpChannel = imfilter(imfilter(lpChannel, zeroP
180         'replicate', 'conv'), zeroPad(hx, iChannel)
181     end
182 end
183 % -----
184
185 % ----- IDWT -----
186 function img = idwt(hpChannels, lpChannel, sampl)
187 %IDWT Reconstructs a signal that has been decomposed
188 %      S = IDWT(HPCHANNELS, LPCHANNEL, SAMPL)
189 %      HPCHANNELS, LPCHANNEL - Output from DWT, write 'h
190 %      SAMPL                  - Boolean that indicates we
191 %                              downsamped during decomp
192
193 % Filter coefficients for reconstructing filters.
194 hx = [0.0625 0.25 0.375 0.25 0.0625];
195 kx = [-0.00390625 -0.03515625 -0.14453125 -0.36328125
196       0.14453125 0.03515625 0.00390625 0];
197 lx = [0.001953125 0.015625 0.0546875 0.109375 0.63671
198       0.0546875 0.015625 0.001953125];

```