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256
257 if c > tMin
258     t = c*sigma;
259 else
260     t = tMin*sigma;
261 end
262 % Apply soft thresholding
263 U = sign(V).*(abs(V)-t).*(abs(V) > t);
264 % -----
265
266 % ----- EGAG -----
267 function Y = egag( X, b, c, t1, t2, t3 )
268 %EGAG Signal enhancement of X through Generalized Ada
269 %   Y = EGAG( X, B, C, T1, T2, T3 ).
270 %   X is the signal that you want to enhance, it can
271 %   a matrix. Parameters B and C control the amount c
272 %   T2 and T3 are thresholds. Values in [0 T1] are ma
273 %   [T2 T3] are amplified and values in ]T1 T2[ and a
274 %   altered.
275
276 a = 1./(sigm(c*(1-b))-sigm(-c*(1+b)));
277 signx = sign(X);
278 U = signx.*(abs(X)-t2)./(t3-t2);
279 U_bar = a*(t3-t2)*(sigm(c*(U-b))-sigm(-c*(U+b)));
280
281 Y = (signx.*t2+U_bar).*((abs(X) <= t3).*((abs(X) >= t
282     X.*((abs(X) > t3) + (abs(X) < t2)).*(abs(X)>t1);
283
284 function Y = sigm( X )
285 %SIGM A sigmoid function
286 %   Y = SIGM(X) = 1./(1+exp(-X));
287
288 Y = 1./(1+exp(-X));
289 % -----
290
291 % ----- ZEROPAD -----
292 function out = zeroPad(in, n)
293 %ZEROPAD Insert zeros between elements of a vector or
294 %   Y = ZEROPAD(X,N) inserts 2^(N-1)-1 zeros between
295 %   vector or matrix X. If X is a matrix X will be ze
296 %   dimensions.
297
298 if (n <= 0)
299     error('n must be equal to or larger than one');
300 end
301 if (n == 1)
302     out = in;
303 else
304     n = 2^(n-1);
305     out = zeros(size(in,1),n*size(in,2)-n+1);
306     out(:,1:n:end)=in;
307 end
308 % -----
309
310 % ----- LOOKUP -----
311 function Y = lookUp(funTable,res,X)
312 %LOOKUP Look up values in a function table with NN-in

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