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

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