ESTIMATION OF NUMBER OF OPERATIONS

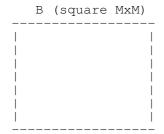
Let I be an image of size NxN

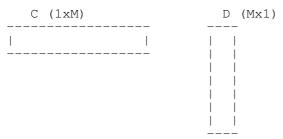
Let B, C and D are 3 structuring elements:

B: square MxM

C: 1xM D: Mx1

If B = dilation_C (D) = dilation_D (C)





then the dilation by structuring element B can be computed by sequentially composing dilations by C and by D:

In order to consider the estimated number of operations associated to both ways, we are going to assume:

- The maximum (or minimum) of n numbers can be computed using (n-1) elementary maximum (or minimum) operations. - Border effects are disregarded, i.e., all pixels are going to be equally considered.

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Option of dilation_B (I)
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Number of elementary maximum operations:
number of pixels x number of operations per pixel
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(NxN)x(MxM-1)
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Option of dilation_D ( dilation_C (I) )
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Number of elementary maximum operations (2 sequential dilations):

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((NxN)x(M-1))+((NxN)x(M-1))=
2 \times (NxN) \times (M-1)
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