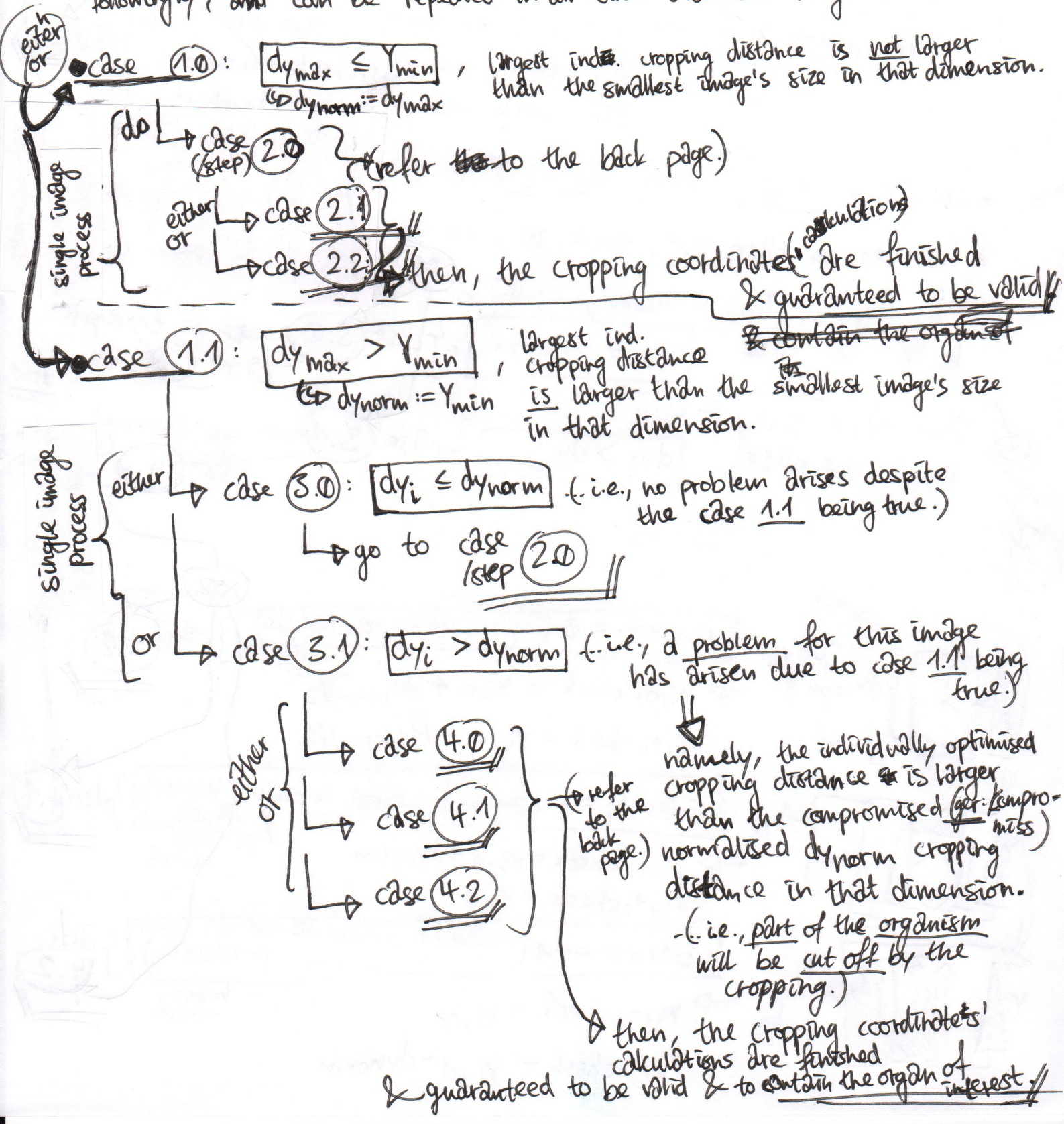


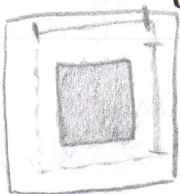
On the back page of this sheet ~~is~~ is a comprehensive description of the different possible scenarios ('cases') an image can be in when it is to be cropped, assuming the ~~the~~ individually optimal cropping regions/windows/coordinates ~~are known~~ of all specimens in a given data set are known.

These cases are ~~the~~ the same ~~in~~ for every spatial dimension of an image. Therefore, ~~the~~ the workflow diagram is written just in one dimension, followingly, and can be repeated in all other available image dimensions:





Cropping 15.9.2023



$dy_{norm} = dy_{max}$  case 1.0  $dy_{max} > y_{min} \Rightarrow dy_{norm} = y_{min}$  case 1.1  $dy_{max} \leq y_{min}$

$y_{i,0,check} = y_{i,mid} - (dy_{norm}/2)$   
 $y_{i,1,check} = y_{i,mid} + (dy_{norm}/2)$

$\rightarrow y_{i,0,check} < 0 \Rightarrow y_{i,0,check-undershoot} = (-1) \cdot y_{i,0,check}$   
 $y_{i,0,check} += y_{i,0,check-undershoot}$   
 $y_{i,1,check} += y_{i,0,check-undershoot}$

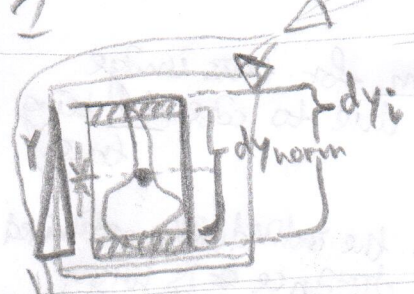
$\rightarrow y_{i,1,check} > y_i \Rightarrow y_{i,1,check-overshoot} = y_{i,1,check} - y_i$   
 $y_{i,0,check} -= y_{i,1,check-overshoot}$   
 $y_{i,1,check} -= y_{i,1,check-overshoot}$

in case 1.0, case 2.0-2.2 is all there is to it.

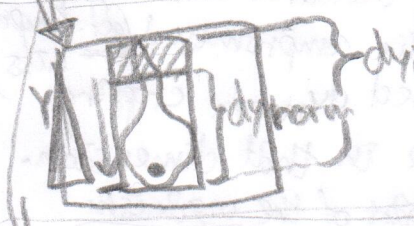
However, in case 1.1, there is more to be considered:

If  $dy_{norm} = y_{min} < dy_{max}$ , then some images  $\in i$  will be in the case  $dy_i \leq dy_{norm}$  case 3.0  $\Rightarrow$  go through cases 2.x, then you are done.

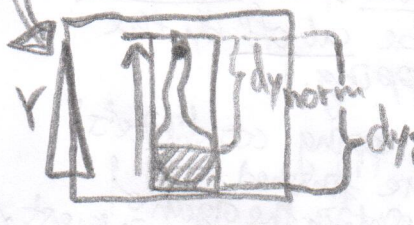
And some images  $\in i$  will be in the case  $dy_i > dy_{norm}$  case 3.1  $\Rightarrow$  go through cases 4.x, then you are done.



$y_{interest_i} = 0$  (origin of interest  $\approx$  in middle)  
 $\Rightarrow y_{i,0,check} = y_{i,0} + (dy_{norm})/2$   
 $y_{i,1,check} = y_{i,1} - (dy_{norm})/2$



$y_{interest_i} = 1$  (origin of interest  $\approx$  towards higher y-values)  
 $\Rightarrow y_{i,0,check} = y_{i,0} + dy_{norm}$   
 $y_{i,1,check} = y_{i,1}$



$y_{interest_i} = -1$  (origin of interest  $\approx$  towards lower y-values)  
 $\Rightarrow y_{i,0,check} = y_{i,0}$   
 $y_{i,1,check} = y_{i,1} - dy_{norm}$