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1: input:  $D^{\text{raw}}, x^{\text{target,raw}}, y^{\text{target,raw}}$ 
2: for all frame[ $F$ ] do
3:   for all AOI[ $N + N_c$ ] do
4:     ▷  $(P - 1)/2$  is an AOI image center
5:     ▷ round function rounds to the closest integer
6:     shiftX = round  $(x^{\text{target,raw}} - (P - 1)/2)$ 
7:     shiftY = round  $(y^{\text{target,raw}} - (P - 1)/2)$ 
8:      $x^{\text{target}} = x^{\text{target,raw}} - \text{shiftX}$ 
9:      $y^{\text{target}} = y^{\text{target,raw}} - \text{shiftY}$ 
10:     $D_{\text{AOI}(n), \text{pixelX}(i), \text{pixelY}(j)} = D_{\text{pixelX}(i+\text{shiftX}_{\text{AOI}(n)}), \text{pixelY}(j+\text{shiftY}_{\text{AOI}(n)})}^{\text{raw}}$ 
return  $D, x^{\text{target}}, y^{\text{target}}$ 

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