

Movie-Mode Unbending

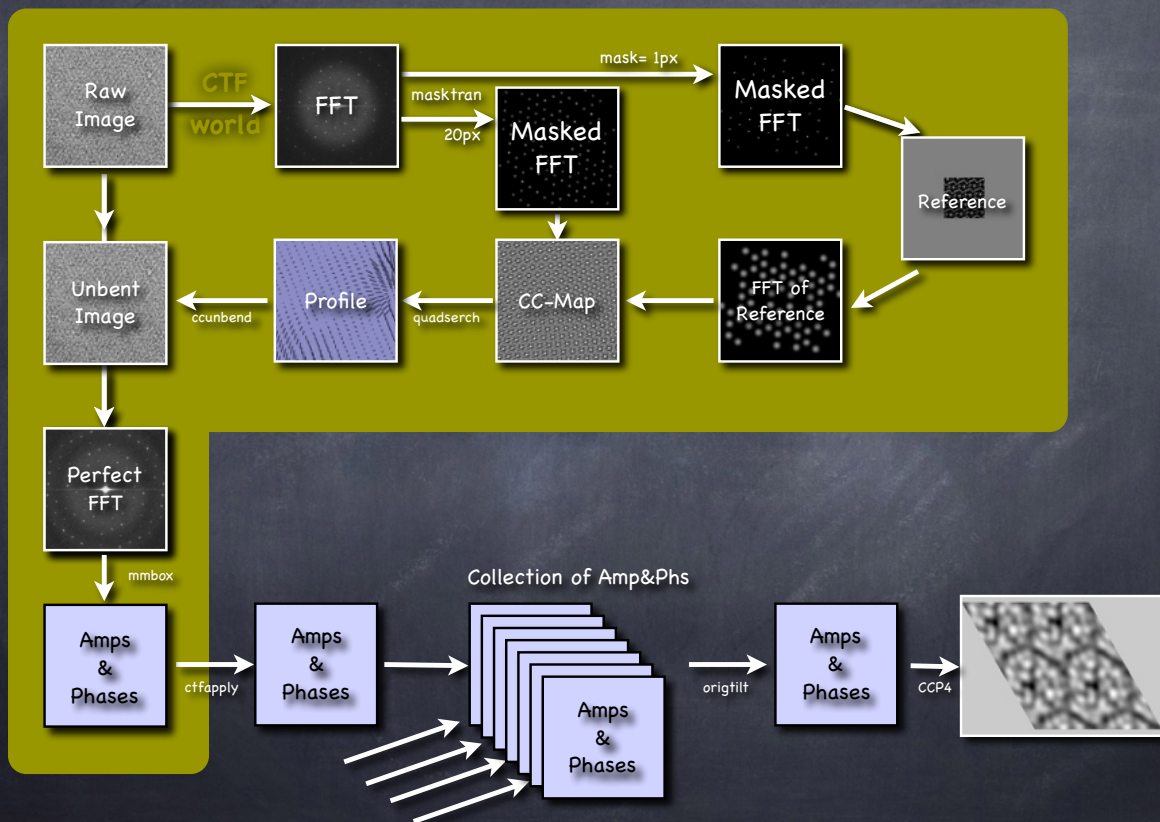
Henning Stahlberg,
Biozentrum, Uni Basel, Switzerland
c-cina.org

2dx Workshop
Basel, August 23, 2016

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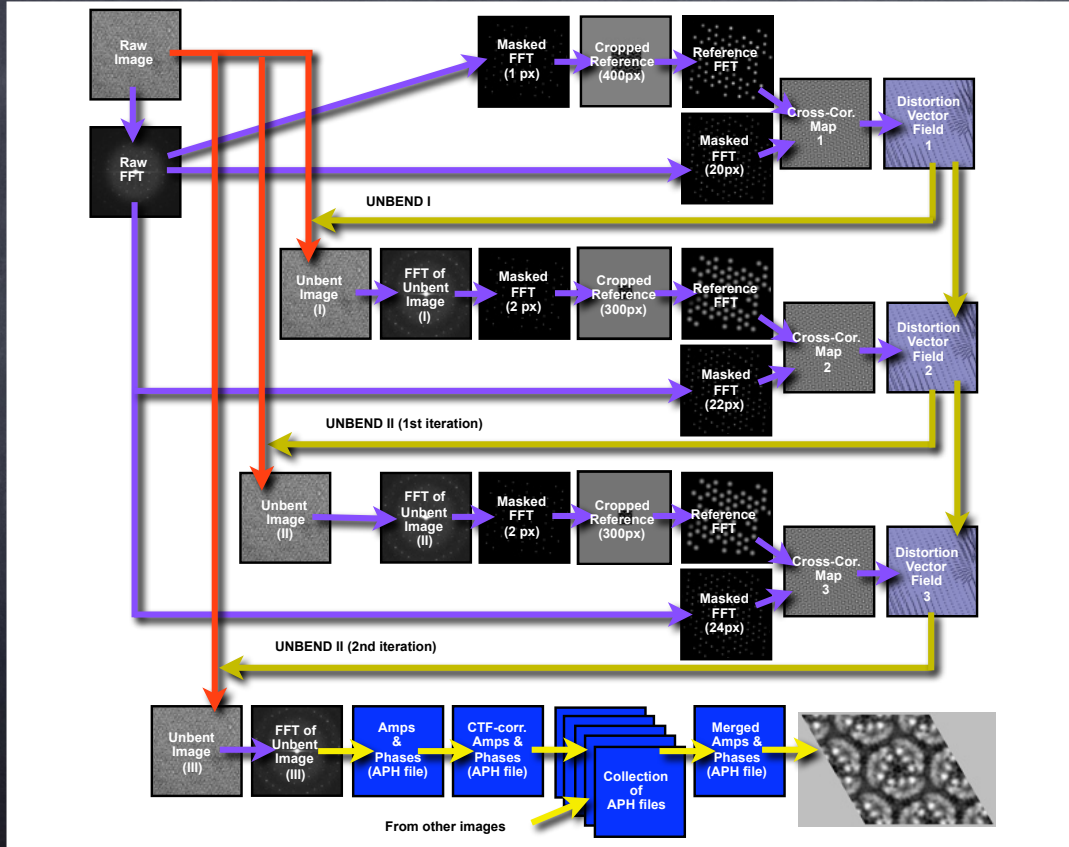
Algorithm Non-tilted



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More Complete Unbending Algorithm

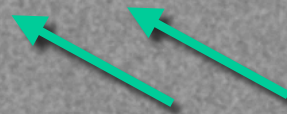


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MloK1 2D crystal, 45° tilted

massive beam-induced sample drift



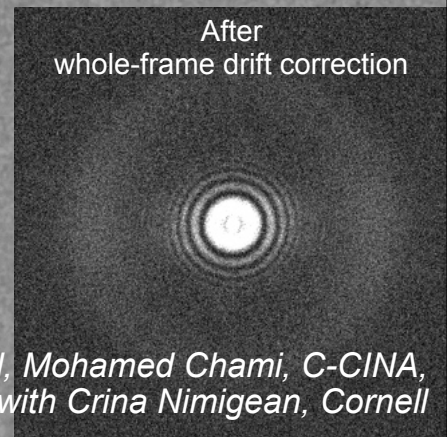
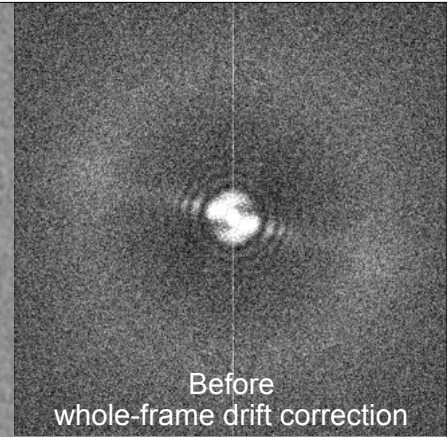
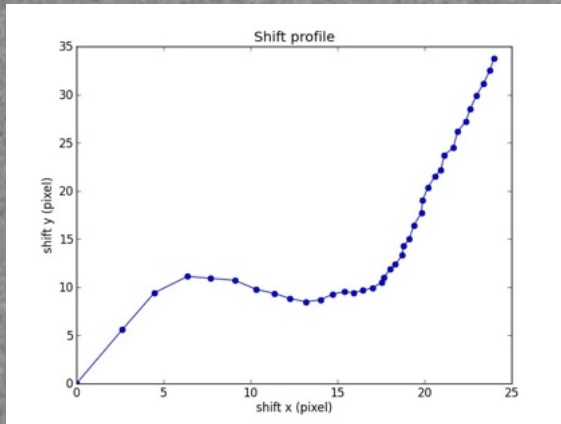
*Julia Kowal, Mohamed Chami, C-CINA,
with Crina Nimigeau, Cornell*

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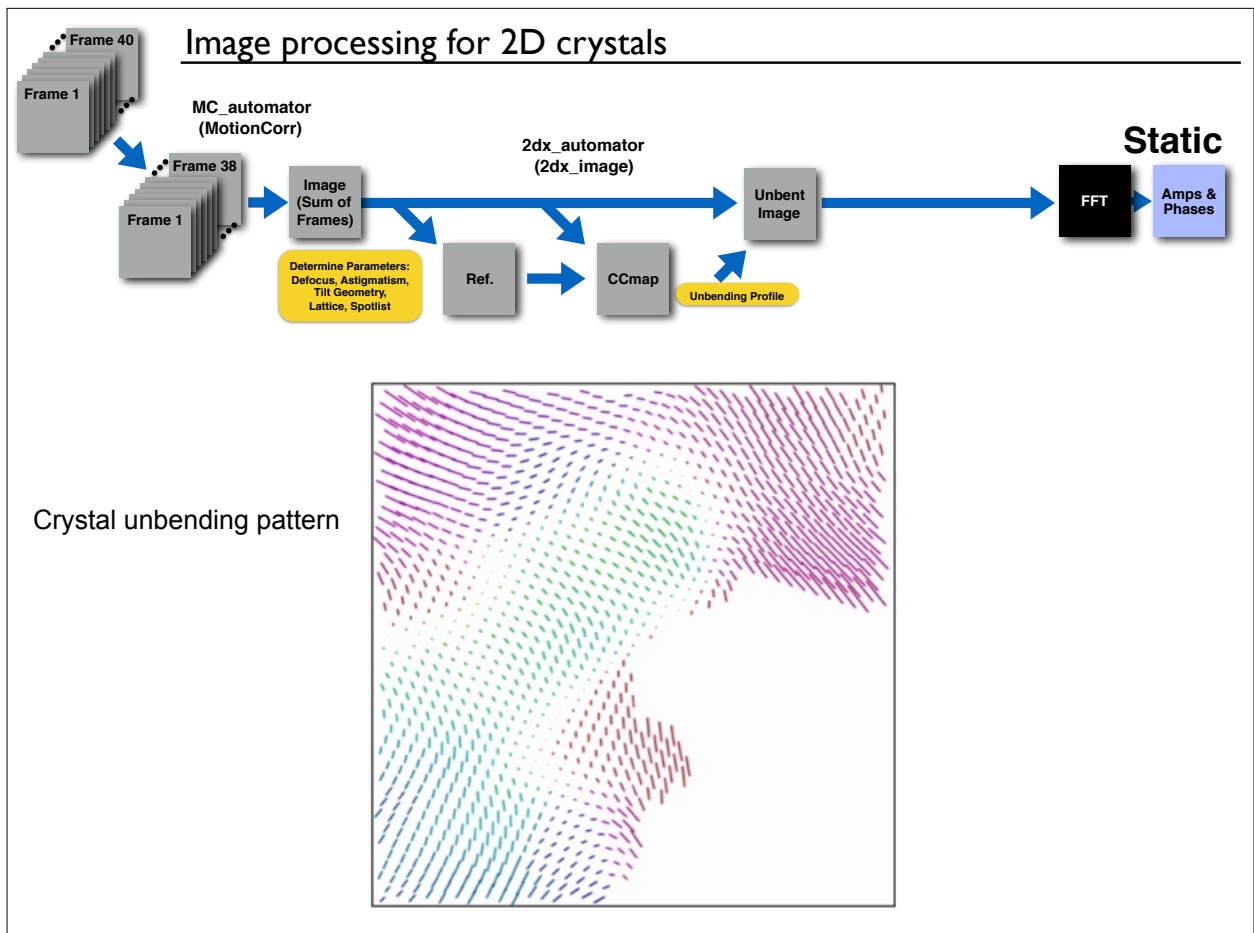
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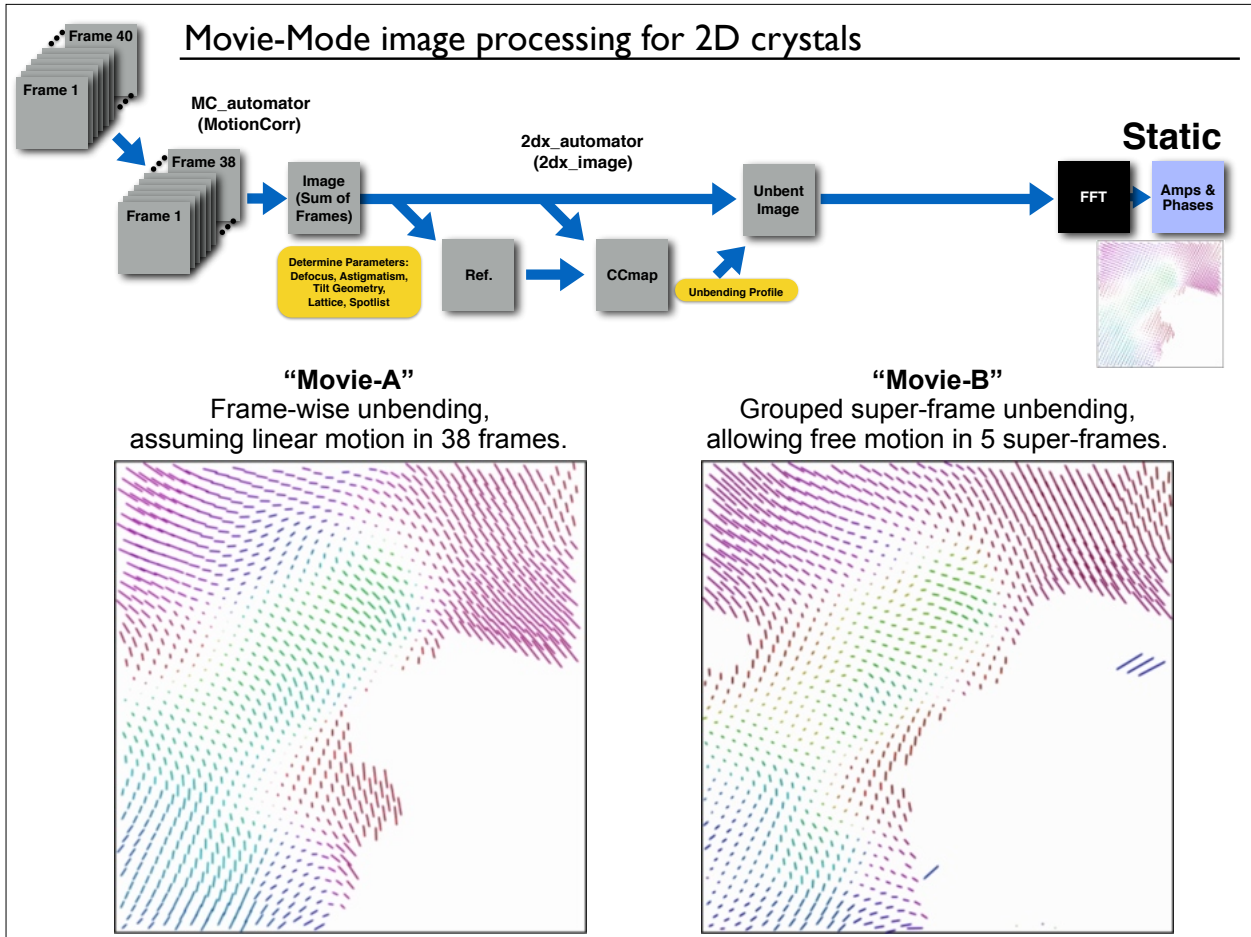
MloK1 2D crystal, 45° tilted

massive beam-induced sample drift



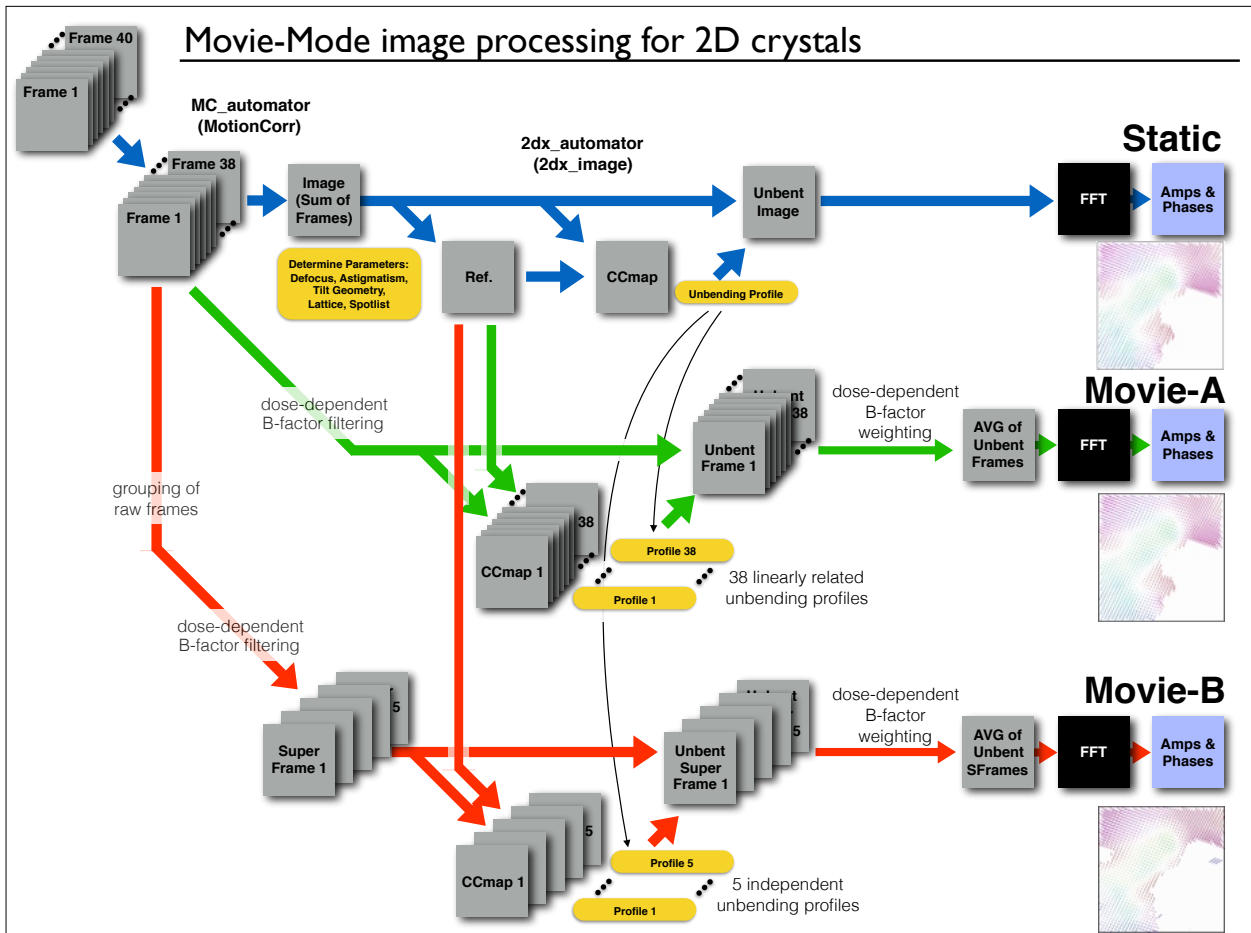
Julia Kowal, Mohamed Chami, C-CINA, with Crina Nimigean, Cornell





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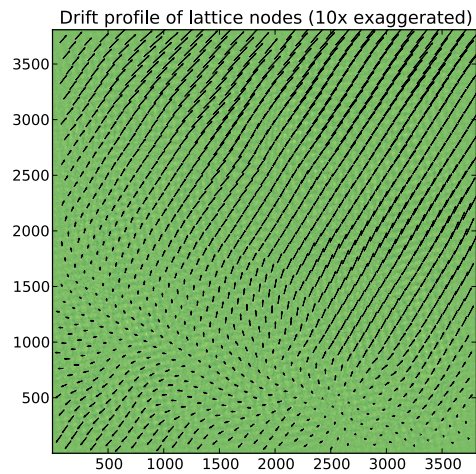
Movie-Mode image processing for 2D crystals: MOVIE-A

Movie-A: Smooth variations of unbending patterns.

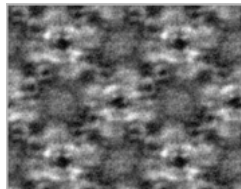
Crystal distortion vectors for 38 frames from the same 2D crystal



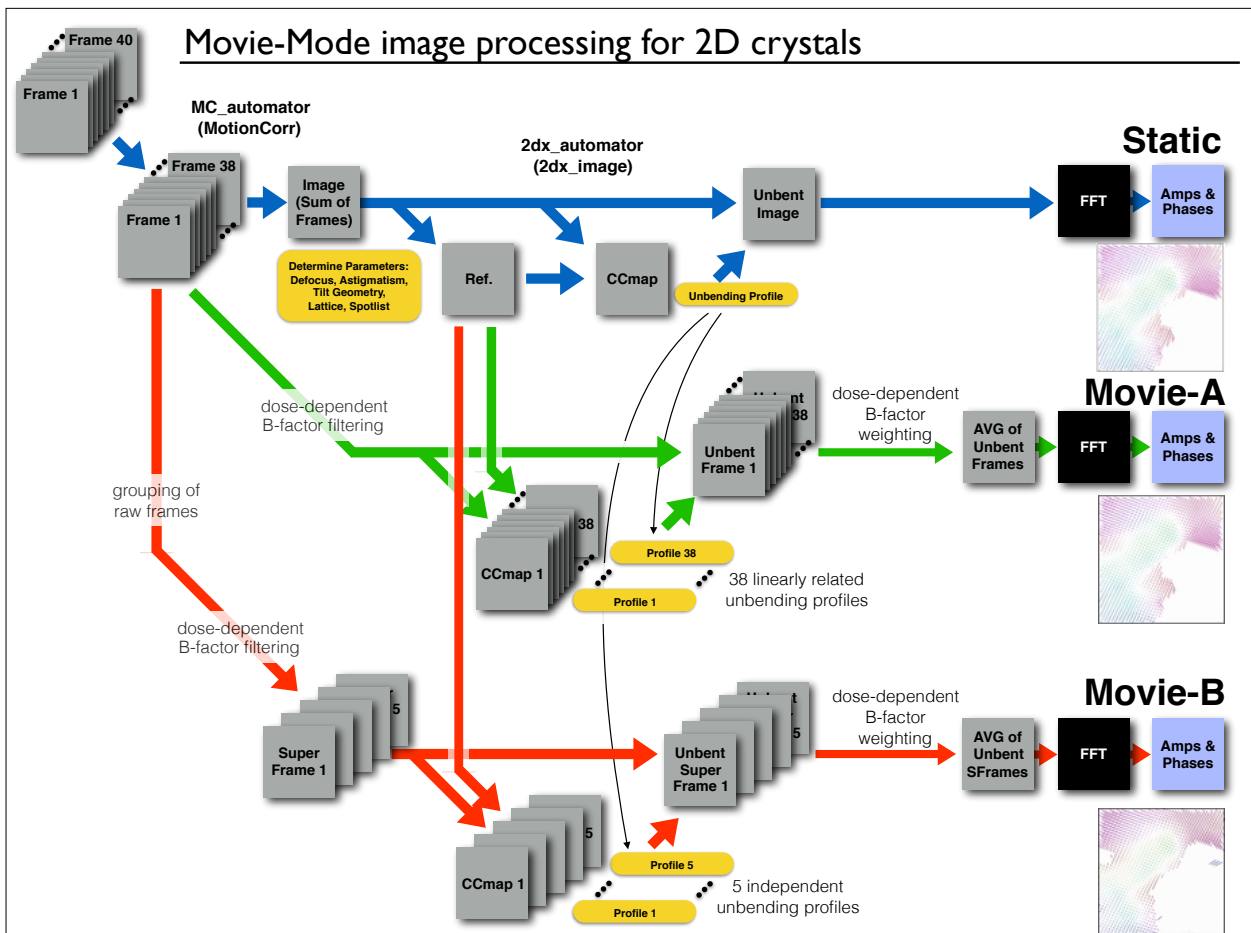
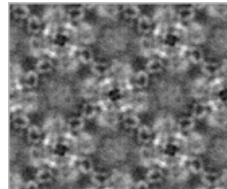
The drift profile for the movie sequence



Reconstruction without movie-mode processing

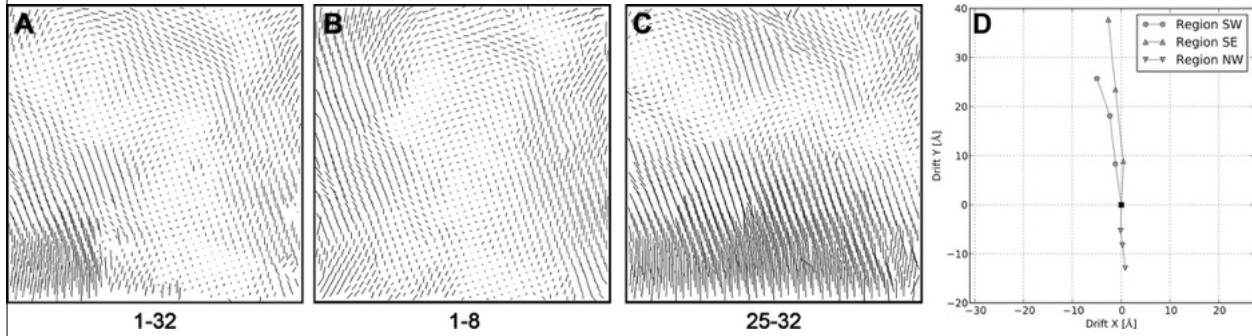


Reconstruction with movie-mode processing



Movie-Mode image processing for 2D crystals: MOVIE-B

Movie-B: Grouping frames into "super-frames".



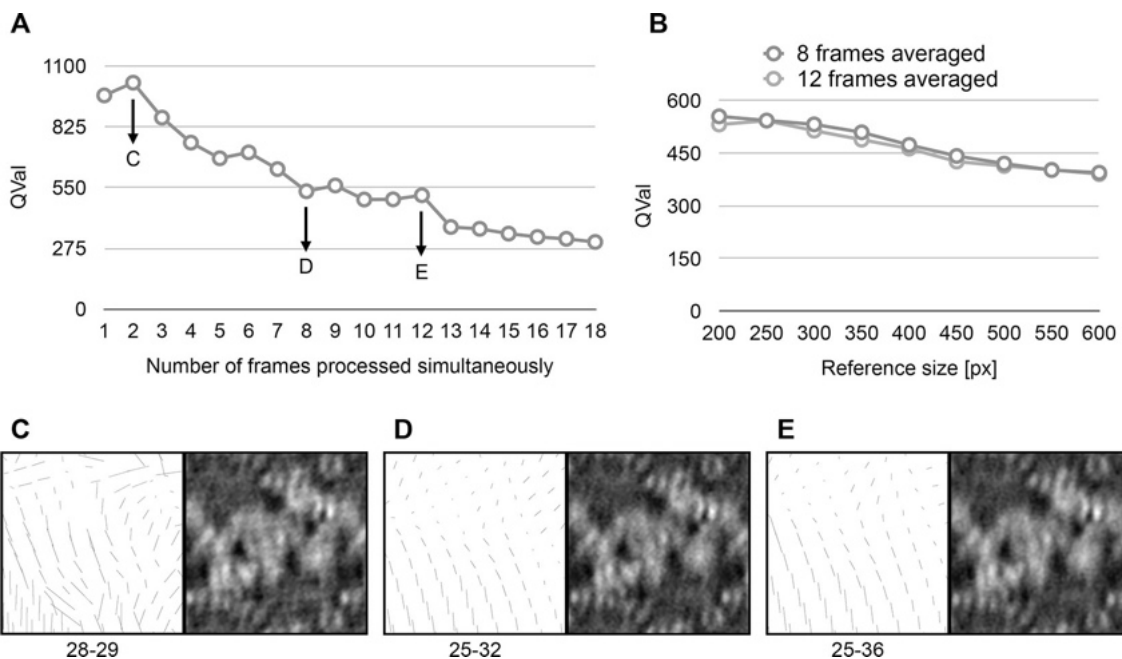
Different Corners of a 2D crystal image drift differently

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Movie-Mode image processing for 2D crystals: MOVIE-B

Movie-B: Grouping frames into "super-frames".

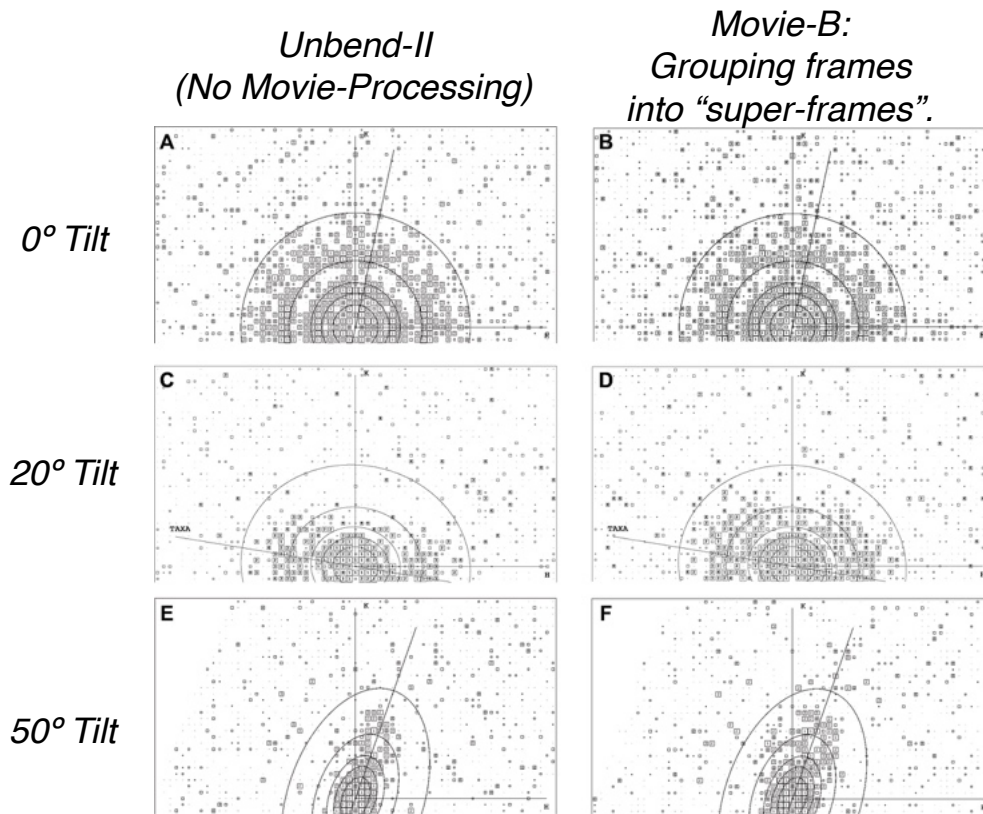


Depending on the SNR, in this example 8 frames should be grouped together to achieve a good QVal and but still coherent unbending patterns.

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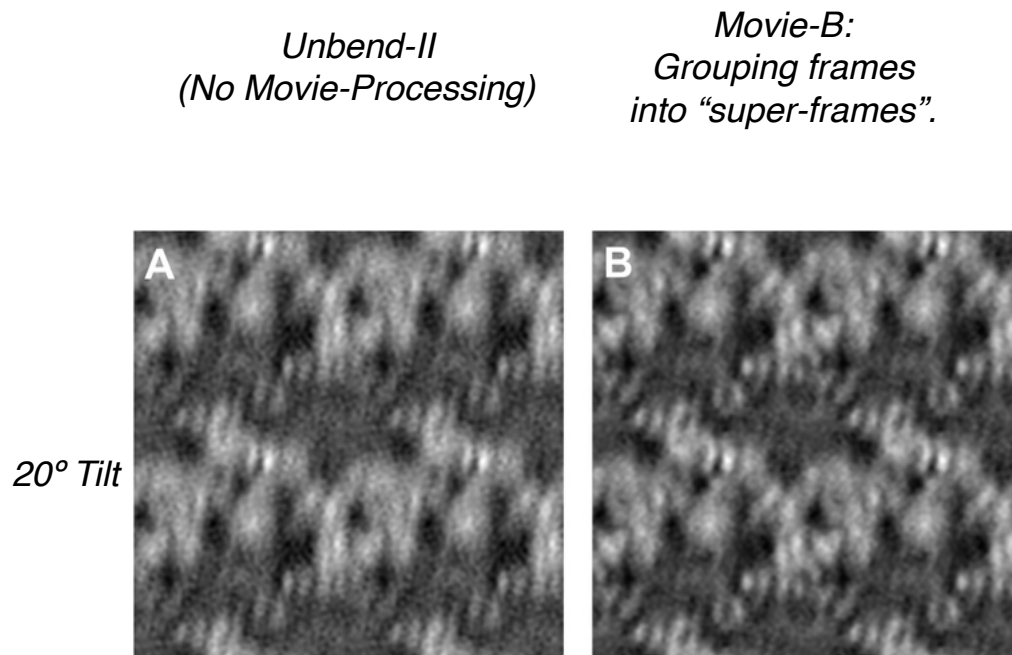
Movie-Mode image processing for 2D crystals: MOVIE-B



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Movie-Mode image processing for 2D crystals: MOVIE-B



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