



Figure 4: Alterations and data preservation during image rotations. The first column is the unrotated original in the indicated format. Second and third column is the original rotated by 30° and a 7.5-fold zoom on the indicated region (white frame in second column). A: The original image processed in the Inkscape vector graphic software shows straight diagonal lines along the original pixel entities without any changes and alterations. B: The image arranged as in (A) but saved as PNG graphic. Note the step-like formation of the diagonal lines due to the pixel-based format in PNG (or TIFF) images. C: Image rotation by 30° in the pixel-based software ImageJ without interpolation leading to information shift artifacts due to the maintained horizontal and vertical pixel grid. D: Processing as in (C) but rotation was performed using bicubic interpolation. The latter improves optical perception but notably reduces contrast (see reduced difference between pixels in last column) and leads to loss in details due to image smoothing.