

Annotation Procedure

Image preparation

- Clip TIR temperature range to 273 - 276 Kelvin to increase contrast
- Use matplotlib's 'cividis' colormap for better visibility

Edge map preparation

- Resize image to 2345 x 3210 for better visibility
- Show different thresholding methods from skimage applied to the image and select the best by manual inspection (in our case mostly 'mean' and 'otsu')
- Binarize the image using the selected filter
- Apply Scharr operator from skimage and convert all non-zero values in the image to 255 to create a clearer mask

Annotation

Software: GIMP 2.10

- Load the image into GIMP
- Add mask as extra layer
- Make edge map background transparent with Colors > Color to Alpha
- Manually correct edges with pencil and eraser tool and fill object with class-specific color (black - melt pond, gray - sea ice, white - ocean)
- Export mask as PNG file