Protocol 3. Intermediate Meeting Master Thesis, 03.05.2019

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Presenting status of work/ Discussion:

- Program is finished and running, dynamic approach should work for large dataset now
- 3 Methods implemented:
    - Otsu Thresholding after ASMAG
    - Kathrin Naegeli's method
    - Improved version of Kathrin Naegeli's method:
        - Iteration for SLA estimate: Instead of finding global maximum of slope on 20 Meter elevation-albedo profile, we use iterative method to find local maximum
        - Dynamic r-crit:
        For determining the critical radius, we fit a step function onto the 20m Elevation-Albedo profile and take R-Squared-Value (goodness of fit) as a measure for the size of the critical radius.
        For R-Value smaller than 0, we use the maximal elevation distance between SLA and highest or lowest snow-covered pixel as r_crit, for and increasing R we decrease r_crit down to 0

Next steps:

- Clean up program style, improve some structures, implement Crampon and OGGM properly into program structure
- Get program running on Vierzack for all data: potentially some issues with a clean installation on a Linux-machine after developing tool in Windows. Need estimate for run-time and produced data amounts
- Write documentation
- Create validation dataset:
    - Question: What do we want to validate? SLA or snow cover?/ How accurate will can the validation dataset be?
    - Task: Finding a good balance between the spatial accuracy of data and the amount of glaciers with any SLA data
    - Represent larger glaciers more in dataset (since they are more relevant for mass balance, therefore the correct snow cover mapping is more important), find good method to do so when creating randomized sample