**PMSoil: Terrain attributes delivery list – Lyss ("Seedorf") area**

25 February 2015

all result files in .tif format (.tif + .tfw)

Software used: If nothing else is mentioned, ArcGIS was used

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Terrain attribute** | **Resolution** | **Input raster** | **Tool** | **Parameters** | **Resulting raster** | **Notes** |
| **Elevation** | 2 m | swissAlti3D\_, Seedorf\_tri\_natn\_none | Clip (Seedorf\_LBEROH\_Clip), Mosaic |  | DTM\_Seedorf\_2m | Extent: 566'000/198'000 – 620'000/224'000 |
| Elevation, smoothed | 2 m | DTM\_Seedorf\_2m | Focal Mean | Radius = 5 Pixel | Se\_alti2m\_fmean\_5c | *smooth\_Seedorf.py* |
| Elevation, smoothed | 2 m | DTM\_Seedorf\_2m | Focal Mean | 10 Pixel | Se\_alti2m\_fmean\_10c |  |
| Elevation, smoothed | 2 m | DTM\_Seedorf\_2m | Focal Mean | 25 Pixel | Se\_alti2m\_fmean\_25c |  |
| Elevation, smoothed | 2 m | DTM\_Seedorf\_2m | Focal Mean | 50 Pixel | Se\_alti2m\_fmean\_50c |  |
| Elevation, standard deviation | 2 m | DTM\_Seedorf\_2m | Focal Stat (Std) | 5 Pixel | Se\_alti2m\_std\_5c | *std\_Seedorf.py* |
| Elevation, standard deviation | 2 m | DTM\_Seedorf\_2m | Focal Stat (Std) | 10 Pixel | Se\_alti2m\_std\_10c |  |
| Elevation, standard deviation | 2 m | DTM\_Seedorf\_2m | Focal Stat (Std) | 25 Pixel | Se\_alti2m\_std\_25c |  |
| Elevation, standard deviation | 2 m | DTM\_Seedorf\_2m | Focal Stat (Std) | 50 Pixel | Se\_alti2m\_std\_50c |  |
| Elevation, resampled | 6 m | DTM\_Seedorf\_2m | Resample | 6m cell, cubic | Se\_alti6m\_c |  |
| Elevation, resampled | 10 m | DTM\_Seedorf\_2m | Resample | 10m cell, cubic | Se\_alti10m\_c |  |
| Elevation, resampled | 25 m | DTM\_Seedorf\_2m | Resample | 25m cell, cubic | Se\_alti25m\_c |  |
| Elevation, resampled | 50 m | DTM\_Seedorf\_2m | Resample | 50m cell, cubic | Se\_alti50m\_c |  |
| Aspect | 2 m | DTM\_Seedorf\_2m | Aspect |  | Se\_aspect2m | 8-pixel neighborhood. -1 = flat |
| **Northness** (N = 0°) | 2 m | Se\_aspect2m | cos(Aspect in Rad.) |  | Se\_n\_aspect2m |  |
|  | 2 m | Se\_aspect2m\_fmean\_5c | cos(Aspect in Rad.) |  | Se\_n\_aspect2m\_5c | aspect\_mean.py, northness\_eastness.py |
|  | 2 m | Se\_aspect2m\_fmean\_10c | cos(Aspect in Rad.) |  | Se\_n\_aspect2m\_10c |  |
|  | 2 m | Se\_aspect2m\_fmean\_25c | cos(Aspect in Rad.) |  | Se\_n\_aspect2m\_25c |  |
|  | 2 m | Se\_aspect2m\_fmean\_50c | cos(Aspect in Rad.) |  | Se\_n\_aspect2m\_50c |  |
| Northness with GRASS | 2 m | Se\_aspect2m\_GRASS\_9c\_conv | cos(Aspect in Rad.) |  | Se\_n\_aspect2m\_GRASS\_9c | r.param.scale in GRASS gives aspect values from -180 to 180 ⭢ first converted to values from 0 to 360, then transformed to N/E |
|  | 2 m | Se\_aspect2m\_GRASS \_17c\_conv | cos(Aspect in Rad.) |  | Se\_n\_aspect2m\_GRASS\_17c | aspect\_GRASS\_conversion.py, northness\_eastness.py |
|  | 2 m | Se\_aspect2m\_GRASS\_45c\_conv | cos(Aspect in Rad.) |  | Se\_n\_aspect2m\_GRASS\_45c |  |
| Northness with resampled DTM | 6 m | Se\_aspect6m | cos(Aspect in Rad.) |  | Se\_n\_aspect6m |  |
|  | 10 m | Se\_aspect10m | cos(Aspect in Rad.) |  | Se\_n\_aspect10m |  |
|  | 25 m | Se\_aspect25m | cos(Aspect in Rad.) |  | Se\_n\_aspect25m |  |
|  | 50 m | Se\_aspect50m | cos(Aspect in Rad.) |  | Se\_n\_aspect50m |  |
| **Eastness** (E = 90°) | 2 m | Se\_aspect2m | sin(Aspect in Rad.) |  | Se\_e\_aspect2m |  |
|  | 2 m | Se\_aspect2m\_fmean\_5c | sin(Aspect in Rad.) |  | Se\_e\_aspect2m\_5c |  |
|  | 2 m | Se\_aspect2m\_fmean\_10c | sin(Aspect in Rad.) |  | Se\_e\_aspect2m\_10c |  |
|  | 2 m | Se\_aspect2m\_fmean\_25c | sin(Aspect in Rad.) |  | Se\_e\_aspect2m\_25c |  |
|  | 2 m | Se\_aspect2m\_fmean\_50c | sin(Aspect in Rad.) |  | Se\_e\_aspect2m\_50c |  |
| Eastness with GRASS | 2 m | Se\_aspect2m\_GRASS\_9c\_conv | sin(Aspect in Rad.) |  | se\_e\_aspect2m\_GRASS\_9c |  |
|  | 2 m | Se\_aspect2m\_GRASS\_17c\_conv | sin(Aspect in Rad.) |  | Se\_e\_aspect2m\_GRASS\_17c |  |
|  | 2 m | Se\_aspect2m\_GRASS\_45c\_conv | sin(Aspect in Rad.) |  | Se\_e\_aspect2m\_GRASS\_45c |  |
| Eastness with resampled DTM | 6 m | Se\_aspect6m | sin(Aspect in Rad.) |  | Se\_e\_aspect6m |  |
|  | 10 m | Se\_aspect10m | sin(Aspect in Rad.) |  | Se\_e\_aspect10m |  |
|  | 25 m | Se\_aspect25m | sin(Aspect in Rad.) |  | Se\_e\_aspect25m |  |
|  | 50 m | Se\_aspect50m | sin(Aspect in Rad.) |  | Se\_e\_aspect50m |  |
| Slope | 2 m | DTM\_Seedorf\_2m | Slope (ArcGIS) | default (8 p nbh.) | Se\_slope2m | 8-pixel neighborhood (Horn) |
| Slope, smoothed | 2 m | Se\_slope2m | Focal Mean | 5 Pixel | Se\_slope2m\_fmean\_5c | slope\_mean\_std.py |
| Slope, smoothed | 2 m | Se\_slope2m | Focal Mean | 10 Pixel | Se\_slope2m\_fmean\_10c |  |
| Slope, smoothed | 2 m | Se\_slope2m | Focal Mean | 25 Pixel | Se\_slope2m\_fmean\_25c |  |
| Slope, smoothed | 2 m | Se\_slope2m | Focal Mean | 50 Pixel | Se\_slope2m\_fmean\_50c |  |
| Slope, standard deviation | 2 m | Se\_slope2m | Focal Stat (Std) | 5 Pixel | Se\_slope2m\_std\_5c |  |
| Slope, standard deviation | 2 m | Se\_slope2m | Focal Stat (Std) | 10 Pixel | Se\_slope2m\_std\_10c |  |
| Slope, standard deviation | 2 m | Se\_slope2m | Focal Stat (Std) | 25 Pixel | Se\_slope2m\_std\_25c |  |
| Slope, standard deviation | 2 m | Se\_slope2m | Focal Stat (Std) | 50 Pixel | Se\_slope2m\_std\_50c |  |
| Slope with GRASS | 2 m | DTM\_Seedorf\_2m | r.param.scale | window size: 9 | Se\_slope2m\_GRASS\_9c | max. window size: 69 pixel. Algorithm: Horn's. |
| Slope with GRASS | 2 m | DTM\_Seedorf\_2m | r.param.scale | window size: 17 | Se\_slope2m\_GRASS\_17c |  |
| Slope with GRASS | 2 m | DTM\_Seedorf\_2m | r.param.scale | window size: 45 | Se\_slope2m\_GRASS\_45c |  |
| Slope with resampled DTM | 6 m | Se\_alti6m\_c | Slope (ArcGIS) |  | Se\_slope6m |  |
| Slope with resampled DTM | 10 m | Se\_alti10m\_c | Slope (ArcGIS) |  | Se\_slope10m |  |
| Slope with resampled DTM | 25 m | Se\_alti25m\_c | Slope (ArcGIS) |  | Se\_slope25m |  |
| Slope with resampled DTM | 50 m | Se\_alti50m\_c | Slope (ArcGIS) |  | Se\_slope50m |  |
| Slope, smoothed (Gaussian filter) | 2m | Se\_slope2m | weighted smoothing | r = 7 Pixel | Se\_slope2m\_s7 | gaussian\_smoothing\_Se\_sl.py |
| Slope, smoothed (Gaussian filter) | 2m | Se\_slope2m | weighted smoothing | r = 15 Pixel | Se\_slope2m\_s15 |  |
| Slope, smoothed (Gaussian filter) | 2m | Se\_slope2m | weighted smoothing | r = 30 Pixel | Se\_slope2m\_s30 |  |
| Slope, smoothed (Gaussian filter) | 2m | Se\_slope2m | weighted smoothing | r = 60 Pixel | Se\_slope2m\_s60 |  |
| **Curvature** | 2 m | DTM\_Seedorf\_2m | Curvature (ArcGIS) |  | Se\_curv2m | 8-pixel neighborhood |
| Curvature, smoothed | 2 m | Se\_curv2m | Focal Mean | 5 Pixel | Se\_curv2m\_fmean\_5c | curvature\_mean\_std.py |
| Curvature, smoothed | 2 m | Se\_curv2m | Focal Mean | 10 Pixel | Se\_curv2m\_fmean\_10c |  |
| Curvature, smoothed | 2 m | Se\_curv2m | Focal Mean | 25 Pixel | Se\_curv2m\_fmean\_25c |  |
| Curvature, smoothed | 2 m | Se\_curv2m | Focal Mean | 50 Pixel | Se\_curv2m\_fmean\_50c |  |
| Curvature, standard deviation | 2 m | Se\_curv2m | Focal Stat (Std) | 5 Pixel | Se\_curv2m\_std\_5c | area covered by LBEROH has different values from outside (swissalti3D). Outside: rectangular pattern |
| Curvature, standard deviation | 2 m | Se\_curv2m | Focal Stat (Std) | 10 Pixel | Se\_curv2m\_std\_10c |  |
| Curvature, standard deviation | 2 m | Se\_curv2m | Focal Stat (Std) | 25Pixel | Se\_curv2m\_std\_25c |  |
| Curvature, standard deviation | 2 m | Se\_curv2m | Focal Stat (Std) | 50Pixel | Se\_curv2m\_std\_50c |  |
| Curvature with resampled DTM | 6 m | Se\_alti6m\_c | Curvature (ArcGIS) |  | Se\_curv6m |  |
| Curvature with resampled DTM | 10 m | Se\_alti10m\_c | Curvature (ArcGIS) |  | Se\_curv10m |  |
| Curvature with resampled DTM | 25 m | Se\_alti25m\_c | Curvature (ArcGIS) |  | Se\_curv25m |  |
| Curvature with resampled DTM | 50 m | Se\_alti50m\_c | Curvature (ArcGIS) |  | Se\_curv50m |  |
| Curvature, smoothed (Gaussian filter) | 2m | Se\_curv2m | weighted smoothing | r = 7 Pixel | Se\_curv2m\_s7 | gaussian\_smoothing\_Se\_curv.py |
| Curvature, smoothed (Gaussian filter) | 2m | Se\_curv2m | weighted smoothing | r = 15 Pixel | Se\_curv2m\_s15 |  |
| Curvature, smoothed (Gaussian filter) | 2m | Se\_curv2m | weighted smoothing | r = 30 Pixel | Se\_curv2m\_s.30 |  |
| Curvature, smoothed (Gaussian filter) | 2m | Se\_curv2m | weighted smoothing | r = 60 Pixel | Se\_curv2m\_s60 |  |
| **Curvature plan (planform curvature)** | 2 m | DTM\_Seedorf\_2m | Curvature (ArcGIS) |  | Se\_curvplan2m |  |
| Curvature plan, smoothed | 2 m | Se\_curvplan2m | Focal Mean | 5 Pixel | Se\_curvplan2m\_fmean\_5c | "stripe" pattern in SW area (outside LBEROH) |
| Curvature plan, smoothed | 2 m | Se\_curvplan2m | Focal Mean | 10 Pixel | Se\_curvplan2m\_fmean\_10c |
| Curvature plan, smoothed | 2 m | Se\_curvplan2m | Focal Mean | 25 Pixel | Se\_curvplan2m\_fmean\_25c |
| Curvature plan, smoothed | 2 m | Se\_curvplan2m | Focal Mean | 50 Pixel | Se\_curvplan2m\_fmean\_50c |
| Curvature plan, standard deviation | 2 m | Se\_curvplan2m | Focal Stat (Std) | 5 Pixel | Se\_curvplan2m\_std\_5c | area covered by LBEROH has values different from outside. Outside: rectangular pattern |
| Curvature plan, standard deviation | 2 m | Se\_curvplan2m | Focal Stat (Std) | 10 Pixel | Se\_curvplan2m\_std\_10c |  |
| Curvature plan, standard deviation | 2 m | Se\_curvplan2m | Focal Stat (Std) | 25 Pixel | Se\_curvplan2m\_std\_25c |  |
| Curvature plan, standard deviation. | 2 m | Se\_curvplan2m | Focal Stat (Std) | 50 Pixel | Se\_curvplan2m\_std\_50c |  |
| Curvature plan with GRASS | 2 m | DTM\_Seedorf\_2m | r.param.scale | window size: 9 | Se\_curvplan2m\_GRASS\_9c |  |
| Curvature plan with GRASS | 2 m | DTM\_Seedorf\_2m | r.param.scale | window size: 17 | Se\_curvplan2m\_GRASS\_17c |  |
| Curvature plan with GRASS | 2 m | DTM\_Seedorf\_2m | r.param.scale | window size: 45 | Se\_curvplan2m\_GRASS\_45c |  |
| Curvature plan with resampled DTM | 6 m | Se\_alti6m\_c | Curvature (ArcGIS) |  | Se\_curvplan6m |  |
| Curvature plan with resampled DTM | 10 m | Se\_alti10m\_c | Curvature (ArcGIS) |  | Se\_curvplan10m |  |
| Curvature plan with resampled DTM | 25 m | Se\_alti25m\_c | Curvature (ArcGIS) |  | Se\_curvplan25m |  |
| Curvature plan with resampled DTM | 50 m | Se\_alti50m\_c | Curvature (ArcGIS) |  | Se\_curvplan50m |  |
| Curvature plan, smoothed (Gaussian filter) | 2m | Se\_curvplan2m | weighted smoothing | r = 7 Pixel | Se\_curvplan2m\_s7 | gaussian\_smoothing\_Se\_curvplan.py |
| Curvature plan, smoothed (Gaussian filter) | 2m | Se\_curvplan2m | weighted smoothing | r = 15 Pixel | Se\_curvplan2m\_s15 |  |
| Curvature plan, smoothed (Gaussian filter) | 2m | Se\_curvplan2m | weighted smoothing | r = 30 Pixel | Se\_curvplan2m\_s30 |  |
| Curvature plan, smoothed (Gaussian filter) | 2m | Se\_curvplan2m | weighted smoothing | r = 60 Pixel | Se\_curvplan2m\_s60 |  |
| **Curvature prof (profile curvature)** | 2 m | DTM\_Seedorf\_2m | Curvature (ArcGIS) |  | Se\_curvprof2m |  |
| Curvature prof, smoothed | 2 m | Se\_curvprof2m | Focal Mean | 5 Pixel | Se\_curvprof2m\_fmean\_5c |  |
| Curvature prof, smoothed | 2 m | Se\_curvprof2m | Focal Mean | 10 Pixel | Se\_curvprof2m\_fmean\_10c |  |
| Curvature prof, smoothed | 2 m | Se\_curvprof2m | Focal Mean | 25 Pixel | Se\_curvprof2m\_fmean\_25c |  |
| Curvature prof, smoothed | 2 m | Se\_curvprof2m | Focal Mean | 50 Pixel | Se\_curvprof2m\_fmean\_50c |  |
| Curvature prof, standard deviation | 2 m | Se\_curvprof2m | Focal Stat (Std) | 5 Pixel | Se\_curvprof2m\_std\_5c | area covered by LBEROH has different values from outside. Outside: rectangular pattern |
| Curvature prof, standard deviation | 2 m | Se\_curvprof2m | Focal Stat (Std) | 10 Pixel | Se\_curvprof2m\_std\_10c |  |
| Curvature prof, standard deviation | 2 m | Se\_curvprof2m | Focal Stat (Std) | 25 Pixel | Se\_curvprof2m\_std\_25c |  |
| Curvature prof, standard deviation | 2 m | Se\_curvprof2m | Focal Stat (Std) | 50 Pixel | Se\_curvprof2m\_std\_50c |  |
| Curvature prof with GRASS | 2 m | DTM\_Seedorf\_2m | r.param.scale | window size: 9 | Se\_curvprof2m\_GRASS\_9c |  |
| Curvature prof with GRASS | 2 m | DTM\_Seedorf\_2m | r.param.scale | window size: 17 | Se\_curvprof2m\_GRASS\_17c |  |
| Curvature prof with GRASS | 2 m | DTM\_Seedorf\_2m | r.param.scale | window size: 45 | Se\_curvprof2m\_GRASS\_45c |  |
| Curvature prof with resampled DTM | 6 m | Se\_alti6m\_c | Curvature (ArcGIS) |  | Se\_curvprof6m |  |
| Curvature prof with resampled DTM | 10 m | Se\_alti10m\_c | Curvature (ArcGIS) |  | Se\_curvprof10m |  |
| Curvature prof with resampled DTM | 25 m | Se\_alti25m\_c | Curvature (ArcGIS) |  | Se\_curvprof25m |  |
| Curvature prof with resampled DTM | 50 m | Se\_alti50m\_c | Curvature (ArcGIS) |  | Se\_curvprof50m |  |
| Curvature prof, smoothed (Gaussian filter) | 2m | Se\_curvprof2m | weighted smoothing | r = 7 Pixel | Se\_curvprof2m\_s7 | gaussian\_smoothing\_Se\_curvprof.py |
| Curvature prof, smoothed (Gaussian filter) | 2m | Se\_curvprof2m | weighted smoothing | r = 15 Pixel | Se\_curvprof2m\_s15 |  |
| Curvature prof, smoothed (Gaussian filter) | 2m | Se\_curvprof2m | weighted smoothing | r = 30 Pixel | Se\_curvprof2m\_s30 |  |
| Curvature prof, smoothed (Gaussian filter) | 2m | Se\_curvprof2m | weighted smoothing | r = 60 Pixel | Se\_curvprof2m\_s60 |  |
| TWI (Mosaic aus TWI CH, 2014) | 2 m | ras\_ws\_...\_sar\_NoRiver | Mosaic to new Raster |  | Se\_TWI2m | TWI CH: based on procedure in Nussbaum (2011), using Madlene's watersheds. Input: swissalti3D (2013). note: NoData areas along watershed borders |
| TWI, smoothed (Gaussian filter) | 2 m | Se\_TWI2m | weighted smoothing | r = 7 Pixel | Se\_TWI2m\_s7 | gaussian\_smoothing\_Se\_TWI.py |
| TWI, smoothed (Gaussian filter) | 2 m | Se\_TWI2m | weighted smoothing | r = 15 Pixel | Se\_TWI2m\_s15 |  |
| TWI, smoothed (Gaussian filter) | 2 m | Se\_TWI2m | weighted smoothing | r = 30 Pixel | Se\_TWI2m\_s30 |  |
| TWI, smoothed (Gaussian filter) | 2 m | Se\_TWI2m | weighted smoothing | r = 60 Pixel | Se\_TWI2m\_s60 |  |
| Contributing Area, multi-flow (specific catchment area) (Mosaic aus TWI CH) | 2 m | ws\_..\_scacl | Mosaic to new Raster |  | Se\_SCA2m | Mosaic from scacl-Files (TWI CH calculation). no continuous network. |
| DTM with filled sinks | 2 m | DTM\_Seedorf\_2m | ArcGIS Fill Tool |  | DTM\_Seedorf\_2m\_Fill |  |
| Flow Direction, multi-flow | 2 m | DTM\_Seedorf\_2m\_fill (geotiff) | TauDEM D-Infinity Flow Directions |  | Se\_flowdir2m\_dinf (Se\_slp2m\_dinf) | values in Radians (0 ⭢ 2 pi) |
| TPI (Jenness) | 2 m | DTM\_Seedorf\_2m | Minus, Focal Mean | 5-pixel radius | Se\_tpi\_2m\_5c | *Value minus Neighborhood Mean (TPI\_Jenness.py)* |
|  | 2 m | DTM\_Seedorf\_2m | Minus, Focal Mean | 10-pixel radius | Se\_tpi\_2m\_10c |  |
|  | 2 m | DTM\_Seedorf\_2m | Minus, Focal Mean | 25-pixel radius | Se\_tpi\_2m\_25c |  |
|  | 2 m | DTM\_Seedorf\_2m | Minus, Focal Mean | 50-pixel radius | Se\_tpi\_2m\_50c |  |
| D-Infinity Distance Up |  | DTM\_Seedorf\_2m\_fill (geotiff), Se\_flowdir2m\_dinf, Se\_slp2m\_dinf | TauDEM | Average, Horizontal Distance | Se\_flowlen2m\_dinf | based on cropped DTM (watersheds not taken into account) |
| Toposcale | 2 m | DTM\_Seedorf\_2m | toposcaleArcGIS10\_PMSoil\_Se.py | Interval: 10 Pixel | Se\_toposcale2m\_r3\_r50\_i10 | after Madlene's script, effectively highest radius value: 43 Pixel (toposcaleArcGIS10 \_PMSoil\_Gr.py) |
|  |  |  |  |  | Se\_toposcale2m\_r3\_r50\_i10s | smoothed version |
| TRI (Terrain Ruggedness Index) | 2 m | DTM\_Seedorf\_2m | TRI\_alternativ\_Se.py | 3x3-pixel rectangle | Se\_tri2m\_altern\_3c | Approximation of "original" TRI by sqrt(Abs(square(3x3max)-square(3x3min))); TRI\_alternativ.py |
| Roughness | 2 m | DTM\_Seedorf\_2m | Evans ArcGIS Toolbox in ArcMap | 3-pixel rectangle | Se\_rough2m\_rect3c | SQR(FOCALSTDV(dem,RECTANGLE,3,3)) |
|  | 2 m | DTM\_Seedorf\_2m | Evans ArcGIS Toolbox in ArcMap | 5-pixel radius | Se\_rough2m\_5c |  |
|  | 2 m | DTM\_Seedorf\_2m | Evans ArcGIS Toolbox in ArcMap | 10-pixel radius | Se\_rough2m\_10c |  |
|  | 2 m | DTM\_Seedorf\_2m | Evans ArcGIS Toolbox in ArcMap | 25-pixel radius | Se\_rough2m\_25c |  |
|  | 2 m | DTM\_Seedorf\_2m | Evans ArcGIS Toolbox in ArcMap | 50-pixel radius | Se\_rough2m\_50c |  |
| Dissection | 2 m | DTM\_Seedorf\_2m | Evans ArcGIS Toolbox | 5-pixel radius | Se\_diss2m\_5c | (h – hmin)/(hmax-hmin) |
|  | 2 m | DTM\_Seedorf\_2m | Evans ArcGIS Toolbox | 10-pixel radius | Se\_diss2m\_10c |  |
|  | 2 m | DTM\_Seedorf\_2m | Evans ArcGIS Toolbox | 25-pixel radius | Se\_diss2m\_25c |  |
|  | 2 m | DTM\_Seedorf\_2m | Evans ArcGIS Toolbox | 50-pixel radius | Se\_diss2m\_50c |  |
| Surface Area Ratio SAR | 2 m | DTM\_Seedorf\_2m | Evans ArcGIS Toolbox |  | Se\_SAR2m | "true" surface / planimetric area ⭢ measure for "roughness". approximation after Berry: cell area / cos(Slope) |
| Multi-resolution valley bottom flatness | 2 m | DTM\_Seedorf\_2m | SAGA 2.0.8 | default values | Se\_MRVBF2m |  |
| Multi-resolution ridge top flatness | 2 m | DTM\_Seedorf\_2m | SAGA 2.0.8 | default values | Se\_MRRTF2m |  |
| Topographic (positive) openness | 2 m | DTM\_Seedorf\_2m | SAGA 2.1.4 | r=500, sectors, 3, 8 | Se\_PO2m\_r500 |  |
| Negative openness | 2 m | DTM\_Seedorf\_2m |  | r=500, sectors, 3, 8 | Se\_NO2m\_r500 |  |
| Convergence index | 2 m | DTM\_Seedorf\_2m | SAGA | default (aspect, 2x2) | Se\_conv2m |  |
| LS factor | 2 m | slope: Se\_slope2m, catchment area: Se\_SCA2m | SAGA | default (no conversion, Moore et al., 1, 0) | Se\_lsf2m |  |
| Terrain surface convexity | 2 m | DTM\_Seedorf\_2m | SAGA | default (r=10) | Se\_tsc10\_2m |  |
| Vector ruggedness measure | 2 m | DTM\_Seedorf\_2m | SAGA | default (r = 1, no weighting) | Se\_vrm2m |  |
|  | 2 m | DTM\_Seedorf\_2m | SAGA | r = 10 cells, no weighting | Se\_vrm2m\_r10c |  |

"Toolbox Evans": http://evansmurphy.wix.com/evansspatial#!arcgis-gradient-metrics-toolbox/crro