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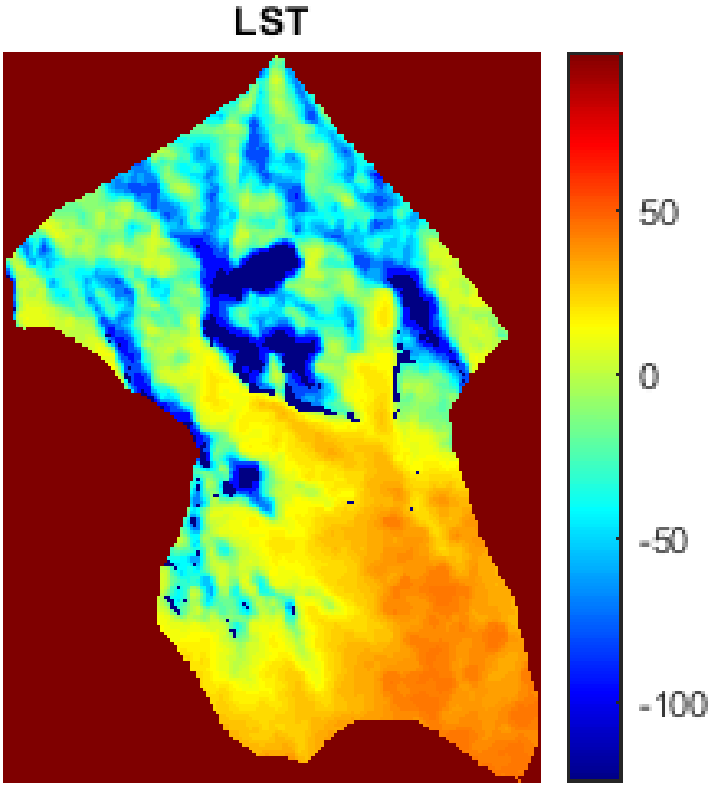
# L A M P I R A N

**Lampiran I: Script Matlab Pengolahan Data *Land Surface Temperature***

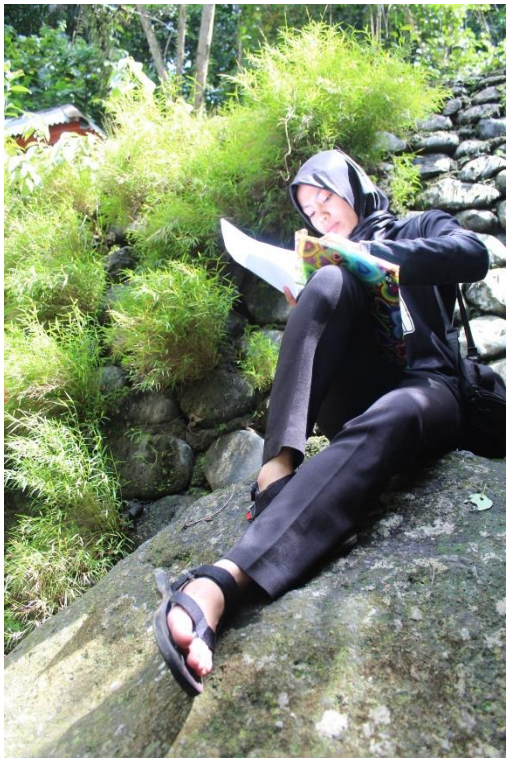
```
clc
clear all
close all

%%%%ToA_Radiance%%%%
R = histeq(uint16(imread ('F:\PROPOSAL GEOFISIKA\Skripsi
Geofisika\LC08_L1TP_114063_20200430_20200509_01_T1 edit\New
Folder (3)\BAND4.tif')));
NIR = histeq(uint16(imread ('F:\PROPOSAL GEOFISIKA\Skripsi
Geofisika\LC08_L1TP_114063_20200430_20200509_01_T1 edit\New
Folder (3)\BAND5.tif')));
Thermal= histeq(uint16(imread ('F:\PROPOSAL GEOFISIKA\Skripsi
Geofisika\LC08_L1TP_114063_20200430_20200509_01_T1 edit\New
Folder (3)\BAND10.tif')));
ToA_RAD= (0.0003342*double(Thermal))+0.1;
figure,imshow(ToA_RAD,[]);
title('ToA Radiance');
colormap(jet);
colorbar;

%%
%%%%Toa_BT%%%%
ToA_BT= (1321.0789 ./ log(774.8853 ./ double(ToA_RAD))+1)-273;
figure,imshow(ToA_BT,[]);
title('Toa BT')
colormap(jet);
colorbar;
%%
%%%%NDVI%%%%
R=double(R);
NIR=double(NIR);
Thermal=double(Thermal);
NDVI= (NIR-R)./(NIR+R);
figure,imshow(NDVI,[]);
title('NDVI')
colormap(jet);
colorbar;
%%
%%%%PV%%%%
R=double(R);
NIR=double(NIR);
Thermal=double(Thermal);
PV= (NDVI+1)./((1+1)^2);
figure,imshow(PV,[]);
title('PV')
colormap(jet);
colorbar;
```

```
%%
%%%%E%%%%
R=double(R);
NIR=double(NIR);
Thermal=double(Thermal);
E = 0.004*PV+0.986;
figure,imshow(E,[]);
title('E')
colormap(jet);
colorbar;
%%
%%%%LST%%%%
R=double(R);
NIR=double(NIR);
Thermal=double(Thermal);
LST = (ToA_BT./1)+(10.6.*(ToA_BT./14380).*log(E));
figure,imshow(LST,[]);
title('LST')
colormap(jet);
colorbar;
```

**Lampiran II: Hasil Pengolahan Data Land Surface Temperature di Matlab**



**Lampiran III : Tabel Data pH dan Suhu di Lapangan (sekitar mata Air Panas)**

| No. | Koordinat | | Elevasi | pH | Suhu | |
|---|---|---|---|---|---|---|
| | Lintang | Bujur | | | | |
| 1 | 4.816722222 | 119.8640278 | 371 | 8.72 | 35.3 | |
| 2 | 4.816666667 | 119.8641389 | 371 | 8.53 | 34.8 | |
| 3 | 4.816638889 | 119.8641389 | 371 | 8.5 | 35 | |
| 4 | 4.816608333 | 119.8641694 | 372 | 8.42 | 35.3 | |
| 5 | 4.816611111 | 119.8641944 | 375 | 8.47 | 34.9 | ***sungai panas*** |
| 6 | 4.817 | 119.8641944 | 370 | 8.29 | 33.8 | |
| 7 | 4.816916667 | 119.8643611 | 370 | 8.27 | 34.3 | |
| 8 | 4.816805556 | 119.8643611 | 368 | 8.45 | 33.8 | |
| 9 | 4.816777778 | 119.8642222 | 370 | 8.38 | 33.8 | |
| 10 | 4.816916667 | 119.8643056 | 374 | 8.36 | 33.5 | |
| 11 | 4.816694444 | 119.8642778 | 370 | 7.47 | 26.6 | |
| 12 | 4.81675 | 119.8642778 | 368 | 7.08 | 23.4 | |
| 13 | 4.817055556 | 119.8643333 | 367 | 7.11 | 23.3 | |
| 14 | 4.816055556 | 119.8628333 | 403 | 6.96 | 26.6 | ***sungai bawah*** |
| 15 | 4.816 | 119.8626944 | 404 | 6.85 | 26.4 | |
| 16 | 4.815805556 | 119.8630556 | 400 | 6.75 | 26.6 | |
| 17 | 4.815805556 | 119.8631389 | 398 | 7.05 | 26.6 | |
| 18 | 4.816527778 | 119.8630278 | 403 | 6.38 | 29.9 | |
| 19 | 4.816555556 | 119.8631667 | 403 | 6.33 | 30.8 | |
| 20 | 4.817138889 | 119.8632222 | 401 | 5.75 | 33.5 | |
| 21 | 4.818583333 | 119.8636944 | 400 | 5.9 | 27.3 | |
| 22 | 4.818638889 | 119.8637778 | 389 | 5.87 | 33.9 | |
| 23 | 4.818694444 | 119.8638611 | 389 | 6.05 | 32.9 | ***air sawah (sw)*** |
| 24 | 4.818472222 | 119.8638611 | 390 | 5.35 | 33.4 | |
| 25 | 4.818325 | 119.8639 | | 5.84 | 34.6 | |
| 26 | 4.818194444 | 119.8639722 | 389 | 6.1 | 34.1 | |
| 27 | 4.818361111 | 119.8638333 | 389 | 5.68 | 32.6 | |
| 28 | 4.818527778 | 119.8628056 | 392 | 6.18 | 28.1 | |
| 29 | 4.818694444 | 119.8625833 | 392 | 5.75 | 32.1 | |
| 30 | 4.818861111 | 119.8625833 | 392 | 6.14 | 27.8 | |

**Lampiran IV: Dokumentasi Pengambilan Data**