There is no autocorrelation of data, we will do Mann-Kendall Test.

\*statistically significant - @ 95% confidence ()

Sf (mwe)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Himalayas | Time | Z | P | Sen’s Slope | Trend Slope  (ITA) | Trend |
| NWH | Annual | -2.32 | 0.020 | -0.000012 | -0.000020 | Decreasing |
|  | DJFM | -2.25 | 0.024 | -0.000025 | -0.000029 | Decreasing |
|  | JJAS | -0.87 | 0.382 | -0.000002 | -0.000002 | No Trend |
| WH | Annual | -1.57 | 0.113 | -0.000003 | -0.000006 | No Trend |
|  | DJFM | -1.38 | 0.161 | -0.000007 | -0.00001 | No Trend |
|  | JJAS | 0.99 | 0.323 | 0.0000009 | 0.0000008 | No Trend |
| TH | Annual | 2.49 | 0.012 | 0.0000026 | 0.0000047 | Increasing |
|  | DJFM | 0.36 | 0.711 | 0.0000002 | 0 | No Trend |
|  | JJAS | 2.38 | 0.016 | 0.0000058 | 0.0000094 | Increasing |

SCA

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Himalayas | Time | Z | p | Sen’s Slope | Trend Slope  (ITA) | Trend |
| NWH | Annual | -2.80 | 0.005 | -0.35 | -0.37 | Decreasing |
|  | DJFM | -1.88 | 0.059 | -0.34 | -0.37 | No Trend |
|  | JJAS | -2.52 | 0.011 | -0.13 | -0.07 | Decreasing |
| TH | Annual | 1.84 | 0.069 | 0.14 | 0.06 | No Trend |
|  | DJFM | 1.23 | 0.217 | 0.17 | -0.02 | No Trend |
|  | JJAS | -1.31 | 0.188 | -0.059 | -0.02 | No Trend |

Albedo

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Himalayas | Time | Z | p | Sen’s Slope | Trend Slope  (ITA) | Trend |
| NWH | Annual | -2.03 | 0.042 | -0.00034 | -0.00036 | Decreasing |
|  | DJFM | -1.25 | 0.208 | -0.00042 | -0.00037 | No Trend |
|  | JJAS | -0.03 | 0.972 | -0.00000 | 0.00021 | No Trend |
| TH | Annual | 2.13 | 0.033 | 0.00036 | 0.0004 | Increasing |
|  | DJFM | 1.06 | 0.309 | 0.0002 | 0.0001 | No Trend |
|  | JJAS | 2.71 | 0.006 | 0.0006 | 0.0008 | Increasing |

SDE

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| --- | --- | --- | --- | --- | --- | --- |
| Himalayas | Time | Z | p | Sen’s Slope | Trend Slope | Trend |
| NWH | Annual | -2.90 | 0.004 | -0.007 | -0.010 | Decreasing |
|  | DJFM | -2.25 | 0.024 | -0.008 | -0.011 | Decreasing |
|  | JJAS | -2.36 | 0.018 | -0.004 | -0.005 | Decreasing |
| WH | Annual | -1.88 | 0.059 | -0.003 | -0.004 | No Trend |
|  | DJFM | -1.25 | 0.208 | -0.002 | -0.003 | No Trend |
|  | JJAS | -1.76 | 0.078 | -0.002 | -0.002 | No Trend |
| TH | Annual | -0.19 | 0.846 | -0.000 | -0.000 | No Trend |
|  | DJFM | 0.41 | 0.681 | 0.000 | 0.000 | No Trend |
|  | JJAS | -2.29 | 0.022 | -0.000 | -0.000 | Decreasing |

SD

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Himalayas | Time | Z | p | Sen’s Slope | Trend Slope  (ITA) | Trend |
| NWH | Annual | -2.61 | 0.008 | -0.002 | -0.003 | Decreasing |
|  | DJFM | -2.13 | 0.033 | -0.002 | -0.002 | Decreasing |
|  | JJAS | -2.29 | 0.021 | -0.002 | -0.002 | Decreasing |
| TH | Annual | -1.18 | 0.235 | -0.000 | -0.000 | No Trend |
|  | DJFM | -0.65 | 0.513 | -0.000 | -0.000 | No Trend |
|  | JJAS | -1.34 | 0.18 | -0.000 | -0.000 | No Trend |

STR

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Himalayas | Time | Z | p | Sen’s Slope | Trend Slope  (ITA) | Trend |
| NWH | Annual | -1.79 | 0.073 | -9934.85 | -12699.10 | No Trend |
|  | DJFM | -1.69 | 0.090 | -11838.5 | -13284.88 | No Trend |
|  | JJAS | -0.85 | 0.395 | -5331.44 | -1748.97 | No Trend |
| TH | Annual | 2.58 | 0.009 | 14273 | 20901.60 | Increasing |
|  | DJFM | -0.79 | 0.424 | -4201.26 | -8271.51 | No Trend |
|  | JJAS | 2.94 | 0.003 | 33607.75 | 45871.04 | Increasing |

SSHF

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| --- | --- | --- | --- | --- | --- | --- |
| Himalayas | Time | Z | p | Sen’s Slope | Trend Slope  (ITA) | Trend |
| NWH | Annual | -2.51 | 0.011 | -7722.87 | -9328.44 | Decreasing |
|  | DJFM | -1.71 | 0.085 | -3794.86 | -6059.16 | No Trend |
|  | JJAS | -1.52 | 0.127 | -4929.21 | -3711.25 | No Trend |
| TH | Annual | 3.07 | 0.002 | 14428.95 | 21594.59 | Increasing |
|  | DJFM | 0.56 | 0.578 | 1265.39 | 3515.74 | No Trend |
|  | JJAS | 3.22 | 0.001 | 25868.83 | 37588.44 | Increasing |