**Table 1.** Summary of Friedman ANOVA and Tukey HSD test, for ash thickness in a flat area in all measurement periods. Different letters mean significant differences at a p<0.05. Data in mm. (a=higher mean, d=lower mean).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | mean | SE | min | max | Friedman ANOVA |
| Control | 119.5a | 5 | 45 | 210 | Chi Sqr.=308.04, *p* <0.001 |
| 4 days | 30.9b | 1.2 | 10 | 72 |
| 16 days | 22.2c | 1.0 | 2 | 49 |
| 34 days | 2.6d | 0.2 | 0 | 10 |
| 45 days | 1.1 d | 0.1 | 0 | 5 |

**Table 2.** Summary of Friedman ANOVA and Tukey HSD test, for ash thickness in slope area in all measurement periods. Different letters mean significant differences at a *p*<0.05. Data in mm. (a=higher mean, c=lower mean).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Mean | SE | Min | max | Friedman ANOVA |
| Control | 92.1a | 4.2 | 29 | 176 | Chi Sqr.=154.61, *p* <0.001 |
| 4 days | 23.1b | 1.7 | 3 | 53 |
| 16 days | 16.2b | 1.4 | 0 | 39 |
| 34 days | 2.2c | 0.4 | 0 | 8 |
| 45 days | 0.8c | 0.2 | 0 | 4 |

**Table 3.** Best-fitted omnidirectional variogram models of ash thickness and corresponding parameters.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Time | Model | Nugget effect | Slope/Sill | Range (m) | Nug/sill ratio |
| 4 days | Linear | 13.35 | 1.42 | 10 | - |
| 16 days | Linear | 7.31 | 0.60 | 10 | - |
| 34 days | Spherical | 0.80 | 6.90 | 7.22 | 0.11 |
| 45 days | Linear | 0.30 | 0.49 | 10 | - |

**Table 4.** Summary statistics of the accuracy of interpolation methods. Numbers in bold indicate the least biased method. A) 4 days after the fire, B) 16 days after the fire, C) 34 days after the fire and D) 45 days after the fire. Correlations between observed and estimated values significant at \*p<0.05, \*\*p<0.01, \*\*\*p<0.001 and n.s (not significant at a p<0.05).

A)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Method | Min | Max | ME | RMSE | Obs *vs* Est | *r* |
| IDW 1 | -10.609 | 7.566 | 0.0195 | 4.572 | 0.9788 | 0.10 n.s |
| IDW 2 | -10.961 | 7.246 | -0.04 | 4.573 | 0.9567 | 0.16 n.s |
| IDW 3 | -11.223 | 7.019 | -0.05922 | 4.662 | 0.9371 | 0.17 n.s |
| IDW 4 | -11.389 | 7.096 | -0.06172 | 4.775 | 0.9360 | 0.16 n.s |
| IDW 5 | -11.490 | 7.424 | -0.0602 | 4.867 | 0.9388 | 0.16 n.s |
| **LP 1** | **-10.235** | **6.696** | **-0.03826** | **4.323** | **0.9562** | **0.35\*** |
| LP 2 | -12.131 | 8.971 | 0.03093 | 5.512 | 0.9722 | 0.03n.s |
| SPT | -10.911 | 6.912 | -0.01973 | 4.661 | 0.9790 | 0.19n.s |
| CRS | -11.068 | 7.526 | -0.02713 | 4.804 | 0.9720 | 0.17n.s |
| MTQ | -11.873 | 9.073 | -0.05668 | 5.267 | 0.9467 | 0.12n.s |
| IMTQ | -10.542 | 7.362 | 0.0469 | 4.530 | 0.9847 | 0.17n.s |
| TPS | -12.466 | 11.040 | -0.05317 | 6.394 | 0.9588 | 0.008n.s |
| OK | -10.791 | 6.946 | 0.01863 | 4.539 | 0.9796 | 0.22n.s |
| SK | -10.701 | 6.688 | -0.03476 | 4.475 | 0.9615 | 0.25n.s |

**Table 4** (Continuation)

B)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Method | Min | Max | ME | RMSE | Obs *vs* Est | *r* |
| IDW 1 | -0.7715 | 0.7126 | -0.003097 | 0.3609 | 0.9575 | 0.16n.s |
| IDW 2 | -0.7754 | 0.7046 | -0.007328 | 0.3514 | 0.8970 | 0.27 n.s |
| IDW 3 | -0.7750 | 0.7075 | -0.007567 | 0.3480 | 0.8926 | 0.32\* |
| IDW 4 | -0.7730 | 0.7134 | -0.006422 | 0.3484 | 0.9089 | 0.33\* |
| IDW 5 | -0.7711 | 0.7185 | -0.005271 | 0.3497 | 0.9254 | 0.34\* |
| LP 1 | -0.6446 | 0.7533 | 0.0386 | 0.3591 | 0.5036 | 0.33\* |
| LP 2 | -0.8045 | 1.6942 | 0.008538 | 0.4700 | 0.9102 | 0.10n.s |
| SPT | -0.7200 | 0.7121 | -0.001585 | 0.3475 | 0.9774 | 0.33\* |
| CRS | -0.7128 | 0.7121 | -0.00147 | 0.3498 | 0.9791 | 0.34\* |
| MTQ | -0.7246 | 0.7008 | 0.0007356 | 0.3655 | 0.9900 | 0.32\* |
| IMTQ | -0.7283 | 0.7173 | -0.0007262 | 0.3467 | 0.9896 | 0.33\* |
| TPS | -0.8182 | 0.8249 | 0.009062 | 0.3969 | 0.8873 | 0.30n.s |
| OK | -0.7411 | 0.7086 | -0.007969 | 0.3488 | 0.8872 | 0.32\* |
| **SK** | **-0.7299** | **0.7068** | **-0.004116** | **0.3464** | **0.9412** | **0.34\*** |

**Table 4** (Continuation)

C)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Method | Min | Max | ME | RMSE | Obs *vs* Est | *r* |
| IDW 1 | -4.819 | 3.242 | 0.03467 | 2.144 | 0.9200 | 0.37\* |
| IDW 2 | -4.323 | 3.104 | -0.07788 | 1.944 | 0.8035 | 0.50\*\*\* |
| IDW 3 | -4.301 | 3.114 | -0.0571 | 1.916 | 0.8533 | 0.53\*\*\* |
| IDW 4 | -4.156 | 3.086 | -0.0641 | 1.879 | 0.8323 | 0.55\*\*\* |
| IDW 5 | -4.077 | 3.066 | -0.06249 | 1.863 | 0.8350 | 0.56\*\*\* |
| LP 1 | -4.038 | 3.415 | 0.1101 | 1.856 | 0.7125 | 0.57\*\*\* |
| LP 2 | -4.038 | 3.546 | 0.1242 | 1.897 | 0.6864 | 0.55\*\*\* |
| SPT | -3.679 | 3.005 | -0.01504 | 1.811 | 0.9589 | 0.60\*\*\* |
| CRS | -3.721 | 3.016 | -0.01452 | 1.809 | 0.9602 | 0.60\*\*\* |
| MTQ | -3.593 | 3.008 | -0.015 | 1.832 | 0.9594 | 0.59\*\*\* |
| **IMTQ** | **-3.797** | **3.028** | **-0.009278** | **1.802** | **0.9745** | **0.60\*\*\*** |
| TPS | -3.853 | 3.460 | 0.02984 | 1.912 | 0.9228 | 0.59\*\*\* |
| OK | -3.641 | 3.105 | -0.001916 | 1.813 | 0.9947 | 0.59\*\*\* |
| SK | -3.723 | 3.092 | -0.04579 | 1.825 | 0.8762 | 0.58\*\*\* |

**Table 4** (Continuation)

D)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Method | Min | Max | ME | RMSE | Obs *vs* Est | *r* |
| IDW 1 | -1.960 | 1.086 | 0.04005 | 0.8689 | 0.774 | 0.31n.s |
| IDW 2 | -1.826 | 1.103 | 0.006488 | 0.8141 | 0.960 | 0.45\*\* |
| IDW 3 | -1.796 | 1.107 | -0.01071 | 0.7907 | 0.933 | 0.48\*\* |
| IDW 4 | -1.906 | 1.088 | -0.01735 | 0.7827 | 0.890 | 0.50\*\*\* |
| IDW 5 | -1.958 | 1.064 | -0.01948 | 0.7793 | 0.876 | 0.51\*\*\* |
| LP 1 | -1,852 | 1.393 | -0.05376 | 0.8264 | 0.686 | 0.41\*\* |
| LP 2 | -2.266 | 1.299 | -0.01511 | 0.871 | 0.914 | 0.39\* |
| SPT | -1.903 | 1.162 | -0.009115 | 0.7729 | 0.941 | 0.54\*\*\* |
| **CRS** | **-1.728** | **1.360** | **0.0007761** | **0.6706** | **0.994** | **0.72\*\*\*** |
| MTQ | -1.774 | 1.676 | 0.01107 | 0.7504 | 0.929 | 0.67\*\*\* |
| IMTQ | -1.898 | 1.174 | -0.008938 | 0.7516 | 0.931 | 0.58\*\*\* |
| TPS | -2.482 | 1.462 | -0.02202 | 0.8297 | 0.869 | 0.51\*\* |
| OK | -1.674 | 1.268 | 0.006854 | 0.7877 | 0.956 | 0.49\*\* |
| SK | -1.778 | 1.264 | -0.004127 | 0.7846 | 0.973 | 0.50\*\* |