matrix of correlations in topsoil

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | SOC | TN | AN | TP | AP | Alt | Slp | pH | SBD | SMC | Clay | Silt | Sand | TG | EEG |
| SOC | 1  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| TN | 0.874415  | 1  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| AN | 0.824390  | 0.935653  | 1  |  |  |  |  |  |  |  |  |  |  |  |  |
| TP | 0.788023  | 0.862014  | 0.843744  | 1  |  |  |  |  |  |  |  |  |  |  |  |
| AP | -0.174724  | 0.044299  | 0.084009  | 0.029332  | 1  |  |  |  |  |  |  |  |  |  |  |
| Alt | -0.095584  | -0.159741  | -0.257134  | -0.209337  | -0.249973  | 1  |  |  |  |  |  |  |  |  |  |
| Slp | 0.116144  | 0.172862  | 0.179584  | 0.243906  | 0.271962  | -0.786287  | 1  |  |  |  |  |  |  |  |  |
| pH | -0.002834  | 0.245220  | 0.261578  | 0.473285  | 0.075543  | -0.358955  | 0.397919  | 1  |  |  |  |  |  |  |  |
| SBD | -0.587088  | -0.452988  | -0.442929  | -0.437593  | 0.248674  | 0.125832  | -0.210684  | 0.053325  | 1  |  |  |  |  |  |  |
| SMC | 0.566930  | 0.456678  | 0.466976  | 0.488586  | -0.228703  | -0.135511  | 0.248341  | 0.027553  | -0.966798  | 1  |  |  |  |  |  |
| Clay | 0.318564  | 0.406735  | 0.433052  | 0.438851  | 0.251879  | -0.802311  | 0.644644  | 0.533144  | -0.114248  | 0.112799  | 1  |  |  |  |  |
| Silt | 0.429922  | 0.481402  | 0.532020  | 0.551917  | 0.179311  | -0.791316  | 0.640991  | 0.504103  | -0.187358  | 0.190191  | 0.932529  | 1  |  |  |  |
| Sand | -0.395652  | -0.473348  | -0.522450  | -0.531344  | -0.195090  | 0.810649  | -0.657618  | -0.533188  | 0.150856  | -0.155072  | -0.956811  | -0.992193  | 1  |  |  |
| TG | 0.655599  | 0.508203  | 0.560925  | 0.381724  | -0.122195  | -0.298851  | -0.002378  | -0.258981  | -0.431752  | 0.353623  | 0.245429  | 0.328996  | -0.299868  | 1  |  |
| EEG | 0.539807  | 0.443844  | 0.478126  | 0.271775  | 0.002603  | -0.111922  | -0.124868  | -0.325434  | -0.111598  | 0.038209  | 0.074619  | 0.197510  | -0.160216  | 0.705689  | 1  |

asymptotic P-values in topsoil

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | SOC | TN | AN | TP | AP | Alt | Slp | pH | SBD | SMC | Clay | Silt | Sand | TG | EEG |
| SOC | NA |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| TN | 0.000000  | NA |  |  |  |  |  |  |  |  |  |  |  |  |  |
| AN | 0.000000  | 0.000000  | NA |  |  |  |  |  |  |  |  |  |  |  |  |
| TP | 0.000000  | 0.000000  | 0.000000  | NA |  |  |  |  |  |  |  |  |  |  |  |
| AP | 0.250986  | 0.772620  | 0.583237  | 0.848313  | NA |  |  |  |  |  |  |  |  |  |  |
| Alt | 0.532243  | 0.294559  | 0.088162  | 0.167553  | 0.097704  | NA |  |  |  |  |  |  |  |  |  |
| Slp | 0.447394  | 0.256150  | 0.237835  | 0.106393  | 0.070720  | 0.000000  | NA |  |  |  |  |  |  |  |  |
| pH | 0.985257  | 0.104462  | 0.082617  | 0.001025  | 0.621868  | 0.015457  | 0.006790  | NA |  |  |  |  |  |  |  |
| SBD | 0.000022  | 0.001780  | 0.002312  | 0.002647  | 0.099517  | 0.410147  | 0.164776  | 0.727916  | NA |  |  |  |  |  |  |
| SMC | 0.000049  | 0.001614  | 0.001221  | 0.000661  | 0.130757  | 0.374777  | 0.099985  | 0.857419  | 0.000000  | NA |  |  |  |  |  |
| Clay | 0.032944  | 0.005560  | 0.002965  | 0.002564  | 0.095090  | 0.000000  | 0.000002  | 0.000163  | 0.454892  | 0.460671  | NA |  |  |  |  |
| Silt | 0.003204  | 0.000814  | 0.000169  | 0.000085  | 0.238563  | 0.000000  | 0.000002  | 0.000415  | 0.217794  | 0.210790  | 0.000000  | NA |  |  |  |
| Sand | 0.007141  | 0.001023  | 0.000232  | 0.000173  | 0.199052  | 0.000000  | 0.000001  | 0.000163  | 0.322578  | 0.309080  | 0.000000  | 0.000000  | NA |  |  |
| TG | 0.000001  | 0.000365  | 0.000061  | 0.009670  | 0.423917  | 0.046133  | 0.987629  | 0.085823  | 0.003062  | 0.017173  | 0.104158  | 0.027335  | 0.045361  | NA |  |
| EEG | 0.000130  | 0.002258  | 0.000894  | 0.070921  | 0.986458  | 0.464187  | 0.413770  | 0.029153  | 0.465488  | 0.803210  | 0.626147  | 0.193428  | 0.293108  | 0.000000  | NA |

matrix of correlations in subsoil

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | SOC | TN | AN | TP | AP | Alt | Slp | pH | SBD | SWC | Clay | Silt | Sand | EEG | TG |
| SOC | 1  | 0.902182  | 0.744304  | 0.447234  | 0.002735  | 0.165655  | -0.209758  | -0.191795  | -0.581305  | 0.592439  | -0.055474  | -0.097070  | 0.084422  | 0.665317  | 0.602966  |
| TN |  | 1  | 0.765537  | 0.584051  | 0.149848  | 0.079431  | -0.174453  | -0.043621  | -0.610976  | 0.642770  | 0.037367  | 0.060045  | -0.069364  | 0.557817  | 0.561260  |
| AN |  |  | 1  | 0.600233  | -0.189726  | -0.107159  | -0.005795  | -0.348077  | -0.570807  | 0.623462  | 0.112866  | 0.136702  | -0.143595  | 0.483824  | 0.678953  |
| TP |  |  |  | 1  | 0.187430  | -0.170023  | 0.230806  | 0.025932  | -0.422209  | 0.497621  | 0.293683  | 0.364612  | -0.375664  | 0.339508  | 0.338698  |
| AP |  |  |  |  | 1  | -0.020251  | 0.092888  | 0.103172  | 0.110593  | -0.104314  | 0.176491  | 0.216224  | -0.216944  | 0.026332  | -0.041726  |
| Alt |  |  |  |  |  | 1  | -0.872205  | 0.051412  | 0.160042  | -0.171251  | -0.779117  | -0.853143  | 0.848204  | -0.123301  | -0.351844  |
| Slp |  |  |  |  |  |  | 1  | -0.081304  | -0.111885  | 0.108227  | 0.814987  | 0.815514  | -0.813726  | 0.043596  | 0.177431  |
| pH |  |  |  |  |  |  |  | 1  | -0.022688  | 0.083156  | 0.151388  | 0.134610  | -0.134110  | -0.149600  | -0.315608  |
| SBD |  |  |  |  |  |  |  |  | 1  | -0.969231  | -0.315518  | -0.233198  | 0.237360  | -0.203239  | -0.572672  |
| SWC |  |  |  |  |  |  |  |  |  | 1  | 0.322300  | 0.259717  | -0.264487  | 0.212753  | 0.564777  |
| Clay |  |  |  |  |  |  |  |  |  |  | 1  | 0.940277  | -0.943058  | 0.150420  | 0.316226  |
| Silt |  |  |  |  |  |  |  |  |  |  |  | 1  | -0.999140  | 0.200607  | 0.366397  |
| Sand |  |  |  |  |  |  |  |  |  |  |  |  | 1  | -0.209019  | -0.363682  |
| EEG |  |  |  |  |  |  |  |  |  |  |  |  |  | 1  | 0.610324  |
| TG |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1  |

asymptotic P-values in subsoil

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | SOC | TN | AN | TP | AP | Alt | Slp | pH | SBD | SWC | Clay | Silt | Sand | EEG | TG |
| SOC | NA | 0.000000  | 0.000000  | 0.004310  | 0.986818  | 0.313530  | 0.199972  | 0.242126  | 0.000104  | 0.000071  | 0.737307  | 0.556621  | 0.609370  | 0.000004  | 0.000049  |
| TN |  | NA | 0.000000  | 0.000095  | 0.362554  | 0.630755  | 0.288151  | 0.792028  | 0.000036  | 0.000010  | 0.821323  | 0.716526  | 0.674787  | 0.000225  | 0.000201  |
| AN |  |  | NA | 0.000054  | 0.247341  | 0.516140  | 0.972069  | 0.029899  | 0.000148  | 0.000022  | 0.493906  | 0.406633  | 0.383150  | 0.001805  | 0.000002  |
| TP |  |  |  | NA | 0.253213  | 0.300759  | 0.157462  | 0.875480  | 0.007420  | 0.001267  | 0.069581  | 0.022483  | 0.018436  | 0.034472  | 0.034933  |
| AP |  |  |  |  | NA | 0.902609  | 0.573824  | 0.531959  | 0.502701  | 0.527403  | 0.282467  | 0.186138  | 0.184641  | 0.873575  | 0.800880  |
| Alt |  |  |  |  |  | NA | 0.000000  | 0.755933  | 0.330435  | 0.297229  | 0.000000  | 0.000000  | 0.000000  | 0.454567  | 0.028053  |
| Slp |  |  |  |  |  |  | NA | 0.622691  | 0.497692  | 0.511941  | 0.000000  | 0.000000  | 0.000000  | 0.792148  | 0.279870  |
| pH |  |  |  |  |  |  |  | NA | 0.890956  | 0.614763  | 0.357586  | 0.413920  | 0.415671  | 0.363358  | 0.050325  |
| SBD |  |  |  |  |  |  |  |  | NA | 0.000000  | 0.050394  | 0.153083  | 0.145677  | 0.214631  | 0.000139  |
| SWC |  |  |  |  |  |  |  |  |  | NA | 0.045389  | 0.110334  | 0.103715  | 0.193477  | 0.000180  |
| Clay |  |  |  |  |  |  |  |  |  |  | NA | 0.000000  | 0.000000  | 0.360703  | 0.049852  |
| Silt |  |  |  |  |  |  |  |  |  |  |  | NA | 0.000000  | 0.220754  | 0.021783  |
| Sand |  |  |  |  |  |  |  |  |  |  |  |  | NA | 0.201598  | 0.022854  |
| EEG |  |  |  |  |  |  |  |  |  |  |  |  |  | NA | 0.000037  |
| TG |  |  |  |  |  |  |  |  |  |  |  |  |  |  | NA |