**Supporting Information**

**Figure S1: (A)** Representative typicalshine down curb of all samples (B) the growth curb and (C) the frequency distribution of palaeodose (LD-795)



**Figure S2:** Radialplot and frequency distribution of ages



**Figure S3:** Ternary plot of Sand, Silt and Clay showing silty-sand to sandy-silt nature of sediment



**Table S1:** Sediment texture (Sand, Silt and Clay percentage) along with sample number and depth.

**Sample No Sand% Silt% Clay% Height (m)**

PP-104 57.0000 41.2000 1.8000 7.5000

PP-100 56.0839 42.1046 1.8115 6.6600

PP-96 59.2522 38.5635 2.1843 5.8700

PP-95 63.7714 34.5366 1.6920 5.7100

PP-93 81.0213 18.0791 0.8996 5.3900

PP-92 44.2834 52.3866 3.3300 5.2300

PP-91 50.1463 47.0197 2.8340 5.0700

PP-90 48.0526 48.8342 3.1132 4.9100

PP-87 42.6770 53.9360 3.3870 4.4300

PP-86 49.6526 47.3310 3.0164 4.2700

PP-85 64.5375 33.3173 2.1453 4.2300

PP-84 57.2832 40.9693 1.7475 4.1900

PP-83 56.0453 41.9090 2.0457 4.1500

PP-82 55.3193 41.5649 3.1158 4.1100

PP-80 51.3446 45.4494 3.2060 4.0300

PP-73 37.1479 58.1540 4.6980 3.7500

PP-66 36.7935 58.7920 4.4145 3.4700

PP-58 46.9085 49.4059 3.6856 3.1500

PP-56 49.9006 46.5514 3.5480 3.0700

PP-53 55.9772 40.9991 3.0237 2.9200

PP-47 60.6982 36.4440 2.8578 2.5000

PP-46 50.3912 46.2151 3.3937 2.4300

PP-41 52.6794 44.3857 2.9349 2.0800

PP-39 52.2407 44.9250 2.8343 1.9400

PP-38 46.2132 50.4909 3.2959 1.8700

PP-37 44.0837 52.9534 2.9629 1.8000

PP-29 38.9609 58.1952 2.8439 1.4000

PP-25 38.0475 59.0034 2.9492 1.2000

PP-21 35.0998 61.5634 3.3368 1.0000

PP-18 32.6487 63.9600 3.3913 0.8500

PP-15 27.4924 68.7531 3.7545 0.7000

PP-12 49.9014 48.1525 1.9461 0.5500

PP-10 29.0475 67.7513 3.2012 0.4500

PP-6 22.2656 73.9939 3.7406 0.2500

PP-1 16.9371 78.9160 4.1469 0.0000

**Table S2:** Sample numbers with depth and Moisture, Corg, CO3-2 and magnetic susceptibility (χlf) of Pratappura profile.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sample No** | **Moisture %** | **TOC %** | **CO3-- %** | **χlf /mass** | **Depth (m)** |
| PP-104 | 3.3868 | 3.2458 | 1.7752 | 2.8861 | 7.5 |
| PP-103 | 3.5083 | 2.7841 | 3.9421 | 4.2978 | 7.29 |
| PP-102 | 3.3949 | 2.6811 | 10.6601 | 4.5089 | 7.08 |
| PP-101 | 3.5643 | 3.5068 | 1.5125 | 3.89 | 6.87 |
| PP-100 | 3.412 | 2.5688 | 1.2214 | 2.9851 | 6.66 |
| PP-99 | 2.9182 | 2.194 | 1.3602 | 3.1867 | 6.45 |
| PP-98 | 2.7172 | 2.2452 | 1.5678 | 3.5159 | 6.24 |
| PP-97 | 3.257 | 2.8851 | 2.2201 | 3.5836 | 6.03 |
| PP-96 | 3.2051 | 2.7764 | 1.166 | 4.4257 | 5.87 |
| PP-95 | 3.2393 | 3.0777 | 1.1832 | 6.7315 | 5.71 |
| PP-94 | 2.628 | 2.0295 | 1.2291 | 6.9156 | 5.55 |
| PP-93 | 2.3845 | 1.7368 | 1.1423 | 7.5954 | 5.39 |
| PP-92 | 4.0772 | 3.393 | 5.0702 | 2.7407 | 5.23 |
| PP-91 | 3.8848 | 2.7374 | 2.2866 | 3.7767 | 5.07 |
| PP-90 | 3.7117 | 2.8568 | 6.8776 | 4.7476 | 4.91 |
| PP-89 | 3.2241 | 1.0974 | 10.8079 | 4.4925 | 4.75 |
| PP-88 | 3.2099 | 0.9995 | 15.0511 | 5.7107 | 4.59 |
| PP-87 | 3.0238 | 1.3504 | 13.6494 | 6.9248 | 4.43 |
| PP-86 | 3.9547 | 1.9873 | 3.3418 | 3.2383 | 4.27 |
| PP-85 | 3.103 | 1.8881 | 2.6788 | 4.5175 | 4.23 |
| PP-84 | 3.2313 | 2.1957 | 2.731 | 5.0916 | 4.19 |
| PP-83 | 3.2054 | 1.6536 | 3.2974 | 5.5858 | 4.15 |
| PP-82 | 3.4606 | 1.6456 | 3.7641 | 2.2115 | 4.11 |
| PP-81 | 3.2558 | 1.5974 | 10.6161 | 2.9724 | 4.07 |
| PP-80 | 2.7857 | 1.7331 | 15.1545 | 4.4334 | 4.03 |
| PP-79 | 4.3146 | 2.5391 | 3.1524 | 2.138 | 3.99 |
| PP-78 | 4.2472 | 1.6921 | 4.5587 | 2.0833 | 3.95 |
| PP-77 | 4.5804 | 2.2842 | 3.8947 | 2.1583 | 3.91 |
| PP-76 | 4.5496 | 3.8389 | 2.4047 | 2.139 | 3.87 |
| PP-75 | 4.5608 | 2.7583 | 3.5118 | 2.3435 | 3.83 |
| PP-74 | 4.7587 | 2.2977 | 3.5964 | 2.22 | 3.79 |
| PP-73 | 5.3003 | 1.6953 | 4.0821 | 2.2989 | 3.75 |
| PP-72 | 5.321 | 2.495 | 3.3642 | 2.2198 | 3.71 |
| PP-71 | 5.6793 | 2.2364 | 3.0159 | 2.1908 | 3.67 |
| PP-70 | 5.7341 | 2.3655 | 2.9104 | 2.2611 | 3.63 |
| PP-69 | 5.9753 | 2.1872 | 3.095 | 2.2291 | 3.59 |
| PP-68 | 5.6664 | 2.1195 | 3.5264 | 2.3404 | 3.55 |
| PP-67 | 5.7186 | 2.4683 | 2.7829 | 2.2495 | 3.51 |
| PP-66 | 5.6098 | 2.607 | 2.3985 | 2.1948 | 3.47 |
| PP-65 | 5.7821 | 2.7929 | 2.2138 | 2.3625 | 3.43 |
| PP-64 | 5.8393 | 2.4826 | 2.4972 | 2.3457 | 3.39 |
| PP-63 | 5.5806 | 1.9902 | 3.252 | 2.2033 | 3.35 |
| PP-62 | 5.4162 | 2.2961 | 2.4605 | 2.2155 | 3.31 |
| PP-61 | 5.2981 | 2.5223 | 2.2017 | 2.1819 | 3.27 |
| PP-60 | 4.8364 | 2.3861 | 1.9412 | 2.1389 | 3.23 |
| PP-59 | 5.05 | 2.0974 | 2.208 | 2.1449 | 3.19 |
| PP-58 | 5.4938 | 1.3078 | 3.2758 | 2.0941 | 3.15 |
| PP-57 | 4.6728 | 1.5668 | 2.7228 | 2.2115 | 3.11 |
| PP-56 | 4.3895 | 1.7508 | 2.3467 | 2.162 | 3.07 |
| PP-55 | 4.5034 | 1.9212 | 2.4023 | 2.1229 | 3.03 |
| PP-54 | 4.468 | 1.3824 | 2.4668 | 2.1185 | 2.99 |
| PP-53 | 3.8208 | 2.2917 | 1.6743 | 2.1392 | 2.92 |
| PP-52 | 3.8246 | 2.0765 | 1.7129 | 2.1237 | 2.85 |
| PP-51 | 3.7685 | 2.1044 | 1.5441 | 2.1516 | 2.78 |
| PP-50 | 3.8281 | 2.2816 | 1.6394 | 2.1452 | 2.71 |
| PP-49 | 4.0539 | 2.3553 | 1.5235 | 2.2453 | 2.64 |
| PP-48 | 3.7427 | 2.2109 | 1.2453 | 2.2809 | 2.57 |
| PP-47 | 3.6984 | 2.0562 | 1.8572 | 2.5321 | 2.5 |
| PP-46 | 3.9891 | 2.2783 | 1.7584 | 2.1496 | 2.43 |
| PP-45 | 3.8714 | 2.4063 | 1.679 | 2.1053 | 2.36 |
| PP-44 | 4.0956 | 2.4255 | 1.6532 | 2.1881 | 2.29 |
| PP-43 | 4.0817 | 2.3108 | 1.4779 | 2.3207 | 2.22 |
| PP-42 | 3.7168 | 1.991 | 1.8283 | 2.4491 | 2.15 |
| PP-41 | 3.7324 | 2.2079 | 1.6631 | 2.4561 | 2.08 |
| PP-40 | 3.7513 | 2.1088 | 1.805 | 2.7495 | 2.01 |
| PP-39 | 3.9186 | 2.2648 | 1.4889 | 3.4949 | 1.94 |
| PP-38 | 4.1021 | 2.2678 | 1.5819 | 3.9368 | 1.87 |
| PP-37 | 3.9479 | 1.6922 | 3.9888 | 4.3575 | 1.8 |
| PP-36 | 4.1627 | 1.8611 | 8.7132 | 3.8809 | 1.75 |
| PP-35 | 3.4099 | 2.018 | 8.3132 | 4.1739 | 1.7 |
| PP-34 | 2.9162 | 1.6362 | 12.0252 | 3.6813 | 1.65 |
| PP-33 | 2.0893 | 4.3484 | 19.0166 | 5.1603 | 1.6 |
| PP-32 | 3.4755 | 1.6732 | 8.6854 | 6.1211 | 1.55 |
| PP-31 | 3.5215 | 1.8742 | 8.9224 | 7.78 | 1.5 |
| PP-30 | 3.3203 | 2.0568 | 10.7523 | 8.2204 | 1.45 |
| PP-29 | 2.8966 | 2.0978 | 14.4197 | 7.4627 | 1.4 |
| PP-28 | 3.2897 | 2.0209 | 11.6723 | 6.5145 | 1.35 |
| PP-27 | 3.8726 | 1.87 | 7.6089 | 7.8507 | 1.3 |
| PP-26 | 3.362 | 2.1453 | 11.7829 | 7.1429 | 1.25 |
| PP-25 | 4.1359 | 2.7196 | 8.2823 | 6.6152 | 1.2 |
| PP-24 | 4.1288 | 2.8303 | 9.1714 | 7.62 | 1.15 |
| PP-23 | 3.8259 | 2.5965 | 9.9381 | 7.9564 | 1.1 |
| PP-22 | 3.789 | 1.8562 | 10.5303 | 8.5316 | 1.05 |
| PP-21 | 4.0751 | 2.2463 | 9.177 | 7.6441 | 1 |
| PP-20 | 4.71 | 2.7122 | 7.2364 | 9.4418 | 0.95 |
| PP-19 | 4.7678 | 2.6845 | 8.1171 | 9.4488 | 0.9 |
| PP-18 | 4.9298 | 3.0189 | 6.131 | 8.363 | 0.85 |
| PP-17 | 4.6077 | 1.9767 | 7.45 | 9.7888 | 0.8 |
| PP-16 | 4.6348 | 2.3941 | 8.7083 | 14.3607 | 0.75 |
| PP-15 | 5.3115 | 2.3041 | 5.3653 | 11.1111 | 0.7 |
| PP-14 | 4.2633 | 2.1423 | 11.9817 | 11.6407 | 0.65 |
| PP-13 | 4.9173 | 2.6047 | 6.5209 | 9.992 | 0.6 |
| PP-12 | 4.7355 | 2.6587 | 8.2468 | 8.6439 | 0.55 |
| PP-11 | 4.9516 | 2.5613 | 7.2548 | 8.3826 | 0.5 |
| PP-10 | 4.4333 | 1.8903 | 10.6862 | 7.5687 | 0.45 |
| PP-9 | 4.9888 | 2.3676 | 9.1821 | 15.6883 | 0.4 |
| PP-8 | 5.5997 | 2.7521 | 5.1701 | 12.6579 | 0.35 |
| PP-7 | 5.2489 | 2.8861 | 6.6961 | 15.037 | 0.3 |
| PP-6 | 5.1762 | 2.537 | 6.5165 | 15.5342 | 0.25 |
| PP-5 | 5.8434 | 2.1111 | 6.3356 | 19.4717 | 0.2 |
| PP-4 | 6.134 | 2.3839 | 6.6458 | 18.1368 | 0.15 |
| PP-3 | 6.4841 | 2.6668 | 5.3021 | 19.1723 | 0.1 |
| PP-2 | 7.044 | 2.9345 | 4.5219 | 18.4504 | 0.05 |
| PP-1 | 6.9716 | 2.829 | 5.3797 | 21.3333 | 0 |

**Table S3:** Sample numbers with depth and Stable carbon isotope (δ13C) variation in the Pratappura profile

|  |  |  |
| --- | --- | --- |
| Sample Name | δ13C(VPDB) | Height (m) |
| PP-104 | -21.45 | 7.5 |
| PP-101 | -21.10 | 6.87 |
| PP-99 | -22.47 | 6.45 |
| PP-97 | -20.28 | 6.03 |
| PP-95 | -21.48 | 5.71 |
| PP-93 | -21.88 | 5.39 |
| PP-91 | -23.52 | 5.07 |
| PP-89 | -21.66 | 4.75 |
| PP-87 | -20.56 | 4.43 |
| PP-85 | -23.12 | 4.23 |
| PP-81 | -25.07 | 4.07 |
| PP-79 | -19.64 | 3.99 |
| PP-75 | -20.44 | 3.83 |
| PP-71 | -20.02 | 3.67 |
| PP-69 | -20.67 | 3.59 |
| PP-67 | -20.93 | 3.51 |
| PP-65 | -21.61 | 3.43 |
| PP-61 | -22.13 | 3.27 |
| PP-59 | -22.35 | 3.19 |
| PP-57 | -25.21 | 3.11 |
| PP-55 | -22.28 | 3.03 |
| PP-53 | -25.90 | 2.92 |
| PP-51 | -24.58 | 2.78 |
| PP-49 | -23.48 | 2.64 |
| PP-47 | -22.92 | 2.5 |
| PP-45 | -22.34 | 2.36 |
| PP-43 | -25.33 | 2.22 |
| PP-41 | -23.74 | 2.08 |
| PP-39 | -24.65 | 1.94 |
| PP-37 | -25.13 | 1.8 |
| PP-35 | -25.34 | 1.7 |
| PP-33 | -24.22 | 1.6 |
| PP-31 | -25.38 | 1.5 |
| PP-29 | -25.24 | 1.4 |
| PP-27 | -24.53 | 1.3 |
| PP-25 | -24.13 | 1.2 |
| PP-23 | -25.26 | 1.1 |
| PP-21 | -22.17 | 1 |
| PP-19 | -25.17 | 0.9 |
| PP-17 | -21.71 | 0.8 |
| PP-15 | -20.97 | 0.7 |
| PP-13 | -22.09 | 0.6 |
| PP-11 | -20.04 | 0.5 |
| PP-9 | -21.10 | 0.4 |
| PP-7 | -22.05 | 0.3 |
| PP-5 | -20.58 | 0.2 |
| PP-3 | -20.57 | 0.1 |
| PP-1 | -24.95 | 0 |

**Table S4:** Sample numbers with depth and Phytolith morphotypes (in %) assemblage in the Pratappura profile

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample No | Height (m) | Bulliform cells% | Rondel% | Trapezoid% | Rods% | Globular% | Globular rough% | Saddle% | Cross & dumbell% | Charcoal% |
| PP-104 | 7.5 | 21.6 | 20.1 | 15.7 | 11.2 | 3.7 | 0.0 | 9.0 | 5.2 | 13.4 |
| PP-102 | 7.08 | 26.6 | 18.1 | 10.6 | 7.4 | 8.5 | 3.2 | 9.6 | 5.3 | 10.6 |
| PP-101 | 6.87 | 9.7 | 16.7 | 31.9 | 19.4 | 5.6 | 0.0 | 0.0 | 0.0 | 16.7 |
| PP-99 | 6.45 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| PP-95 | 5.71 | 36.9 | 23.0 | 16.0 | 13.9 | 7.4 | 2.9 | 0.0 | 0.0 | 0.0 |
| PP-91 | 5.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| PP-87 | 4.43 | 41.8 | 18.2 | 29.1 | 10.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| PP-79 | 3.99 | 35.7 | 17.9 | 9.1 | 4.0 | 4.8 | 3.2 | 4.0 | 0.0 | 21.4 |
| PP-74 | 3.79 | 34.6 | 15.3 | 14.8 | 7.4 | 6.5 | 5.2 | 0.9 | 0.0 | 15.3 |
| PP-72 | 3.71 | 30.7 | 19.7 | 9.1 | 4.3 | 3.9 | 3.5 | 2.4 | 0.0 | 26.4 |
| PP-70 | 3.63 | 39.2 | 17.3 | 14.6 | 8.8 | 4.6 | 1.9 | 1.2 | 0.0 | 12.3 |
| PP-68 | 3.55 | 32.2 | 11.5 | 16.3 | 1.9 | 1.4 | 0.0 | 4.3 | 0.0 | 32.2 |
| PP-65 | 3.43 | 31.9 | 17.1 | 23.1 | 7.2 | 3.6 | 0.8 | 2.8 | 0.0 | 13.5 |
| PP-62 | 3.31 | 33.7 | 13.1 | 18.9 | 7.1 | 4.4 | 1.3 | 2.7 | 0.0 | 18.9 |
| PP-61 | 3.27 | 36.4 | 13.3 | 19.8 | 6.8 | 2.1 | 0.0 | 1.8 | 0.0 | 19.8 |
| PP-57 | 3.11 | 33.6 | 10.8 | 14.7 | 7.3 | 13.8 | 5.2 | 0.0 | 0.0 | 14.7 |
| PP-55 | 3.03 | 30.8 | 11.0 | 5.5 | 10.4 | 6.6 | 12.6 | 4.4 | 3.8 | 14.8 |
| PP-52 | 2.85 | 27.6 | 8.3 | 12.4 | 6.6 | 9.4 | 10.8 | 3.3 | 0.0 | 21.5 |
| PP-48 | 2.57 | 25.0 | 37.5 | 25.0 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| PP-45 | 2.36 | 27.6 | 15.2 | 17.1 | 17.1 | 9.5 | 0.0 | 8.6 | 4.8 | 0.0 |
| PP-42 | 2.15 | 38.6 | 27.3 | 22.7 | 11.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| PP-39 | 1.94 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| PP-32 | 1.55 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| PP-28 | 1.35 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| PP-25 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| PP-22 | 1.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| PP-18 | 0.85 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| PP-13 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| PP-8 | 0.35 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| PP-1 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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