***Title of Paper:*** *Linking above- and belowground phenology of hybrid walnut growing along a climatic gradient in temperate agroforestry systems*

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***Supplemantary Material I: Root survivorship curve data and cox regression model details corresponding to the Fig. 10***

***1.1 Data for plotting the Fig. 10 (a)***

Call: survfit(formula = Surv(ALiveDays, Status) ~ Site, data = surviv2DF)

Site=Continental

time n.risk n.event survival std.err lower 95% CI upper 95% CI

24 614 1 0.9984 0.00163 0.99519 1.0000

26 613 4 0.9919 0.00363 0.98477 0.9990

28 609 54 0.9039 0.01189 0.88090 0.9275

33 555 1 0.9023 0.01198 0.87910 0.9261

35 554 71 0.7866 0.01653 0.75490 0.8197

38 483 1 0.7850 0.01658 0.75319 0.8182

44 479 131 0.5703 0.02002 0.53241 0.6109

56 348 24 0.5310 0.02018 0.49287 0.5721

61 324 6 0.5212 0.02020 0.48303 0.5623

63 318 6 0.5113 0.02022 0.47320 0.5525

64 312 3 0.5064 0.02022 0.46829 0.5476

72 292 72 0.3815 0.01988 0.34450 0.4226

73 220 19 0.3486 0.01955 0.31230 0.3891

84 201 8 0.3347 0.01938 0.29881 0.3749

89 193 2 0.3312 0.01933 0.29545 0.3714

91 191 4 0.3243 0.01923 0.28872 0.3643

95 187 2 0.3208 0.01918 0.28536 0.3607

99 185 9 0.3052 0.01894 0.27027 0.3447

101 176 1 0.3035 0.01892 0.26860 0.3429

105 175 15 0.2775 0.01845 0.24358 0.3161

112 160 3 0.2723 0.01834 0.23860 0.3107

123 157 1 0.2705 0.01831 0.23694 0.3089

127 156 2 0.2671 0.01824 0.23362 0.3053

133 154 4 0.2601 0.01809 0.22699 0.2981

146 150 3 0.2549 0.01798 0.22203 0.2927

151 147 1 0.2532 0.01794 0.22038 0.2909

157 146 1 0.2515 0.01790 0.21873 0.2891

173 145 1 0.2497 0.01786 0.21707 0.2873

175 144 3 0.2445 0.01774 0.21212 0.2819

189 141 2 0.2411 0.01766 0.20883 0.2783

190 132 5 0.2319 0.01745 0.20013 0.2688

201 127 21 0.1936 0.01645 0.16388 0.2287

207 106 2 0.1899 0.01634 0.16045 0.2248

211 104 2 0.1863 0.01623 0.15703 0.2210

217 102 1 0.1845 0.01617 0.15532 0.2190

219 101 2 0.1808 0.01606 0.15191 0.2152

236 99 1 0.1790 0.01600 0.15021 0.2132

239 98 6 0.1680 0.01563 0.14001 0.2016

245 92 7 0.1552 0.01517 0.12817 0.1880

273 75 2 0.1511 0.01505 0.12430 0.1837

274 70 18 0.1122 0.01368 0.08838 0.1425

283 52 37 0.0324 0.00808 0.01985 0.0528

298 15 1 0.0302 0.00783 0.01819 0.0502

302 13 3 0.0232 0.00698 0.01291 0.0419

318 10 5 0.0116 0.00507 0.00494 0.0273

Site=Mediterranean

time n.risk n.event survival std.err lower 95% CI upper 95% CI

17 232 4 0.9828 0.00855 0.96615 0.9997

21 228 33 0.8405 0.02404 0.79470 0.8890

25 195 83 0.4828 0.03281 0.42256 0.5515

39 112 8 0.4483 0.03265 0.38864 0.5171

41 104 9 0.4095 0.03228 0.35085 0.4779

45 95 46 0.2112 0.02680 0.16471 0.2708

46 49 29 0.0862 0.01843 0.05670 0.1311

60 20 5 0.0647 0.01615 0.03963 0.1055

66 15 11 0.0172 0.00855 0.00653 0.0455

89 4 1 0.0129 0.00742 0.00420 0.0398

132 1 1 0.0000 NaN NA NA

Site=Oceanic

time n.risk n.event survival std.err lower 95% CI upper 95% CI

21 167 59 0.64671 0.03699 0.57813 0.7234

41 108 1 0.64072 0.03713 0.57193 0.7178

42 106 50 0.33849 0.03674 0.27363 0.4187

62 56 1 0.33245 0.03658 0.26796 0.4125

63 55 14 0.24783 0.03354 0.19009 0.3231

84 41 17 0.14507 0.02737 0.10023 0.2100

105 24 4 0.12089 0.02534 0.08017 0.1823

121 20 1 0.11485 0.02478 0.07524 0.1753

123 19 1 0.10880 0.02420 0.07035 0.1683

126 18 2 0.09671 0.02297 0.06071 0.1541

163 16 4 0.07253 0.02016 0.04207 0.1251

184 12 4 0.04836 0.01668 0.02460 0.0951

205 8 2 0.03627 0.01453 0.01654 0.0795

207 6 2 0.02418 0.01194 0.00918 0.0637

247 4 1 0.01813 0.01037 0.00591 0.0556

417 2 1 0.00907 0.00825 0.00152 0.0539

559 1 1 0.00000 NaN NA NA

***1.2 Data for plotting the Fig. 10 (b)***

Call: survfit(formula = Surv(ALiveDays, Status) ~ Site + Period, data = surviv2DF)

Site=Continental, Period=P3

time n.risk n.event survival std.err lower 95% CI upper 95% CI

24 52 1 0.981 0.0190 0.944 1.000

26 51 4 0.904 0.0409 0.827 0.988

33 47 1 0.885 0.0443 0.802 0.976

64 43 3 0.823 0.0537 0.724 0.935

99 23 9 0.501 0.0899 0.352 0.712

127 14 2 0.429 0.0902 0.284 0.648

173 12 1 0.394 0.0895 0.252 0.615

189 11 2 0.322 0.0863 0.190 0.545

211 2 2 0.000 NaN NA NA

Site=Continental, Period=P1

time n.risk n.event survival std.err lower 95% CI upper 95% CI

38 21 1 0.9524 0.0465 0.86552 1.000

73 20 19 0.0476 0.0465 0.00703 0.322

101 1 1 0.0000 NaN NA NA

Site=Continental, Period=P2

time n.risk n.event survival std.err lower 95% CI upper 95% CI

28 541 54 0.9002 0.01289 0.8753 0.9258

35 487 71 0.7689 0.01812 0.7342 0.8053

44 416 131 0.5268 0.02147 0.4864 0.5706

56 285 24 0.4824 0.02148 0.4421 0.5264

61 261 6 0.4713 0.02146 0.4311 0.5153

63 255 6 0.4603 0.02143 0.4201 0.5042

72 249 72 0.3272 0.02017 0.2899 0.3692

84 177 8 0.3124 0.01993 0.2757 0.3540

89 169 2 0.3087 0.01986 0.2721 0.3502

91 167 4 0.3013 0.01973 0.2650 0.3425

95 163 2 0.2976 0.01966 0.2615 0.3387

105 161 15 0.2699 0.01908 0.2349 0.3100

112 146 3 0.2643 0.01896 0.2297 0.3042

123 143 1 0.2625 0.01892 0.2279 0.3023

133 142 4 0.2551 0.01874 0.2209 0.2946

146 138 3 0.2495 0.01861 0.2156 0.2888

151 135 1 0.2477 0.01856 0.2139 0.2869

157 134 1 0.2458 0.01851 0.2121 0.2849

175 133 3 0.2403 0.01837 0.2069 0.2791

190 130 5 0.2311 0.01812 0.1981 0.2694

201 125 21 0.1922 0.01694 0.1617 0.2285

207 104 2 0.1885 0.01682 0.1583 0.2246

217 102 1 0.1867 0.01675 0.1566 0.2226

219 101 2 0.1830 0.01662 0.1531 0.2187

236 99 1 0.1811 0.01656 0.1514 0.2167

239 98 6 0.1701 0.01615 0.1412 0.2049

245 92 7 0.1571 0.01565 0.1293 0.1910

273 75 2 0.1529 0.01551 0.1254 0.1865

274 70 18 0.1136 0.01402 0.0892 0.1447

283 52 37 0.0328 0.00820 0.0201 0.0535

298 15 1 0.0306 0.00794 0.0184 0.0509

302 13 3 0.0235 0.00708 0.0130 0.0424

318 10 5 0.0118 0.00513 0.0050 0.0277

Site=Mediterranean, Period=P1

time n.risk n.event survival std.err lower 95% CI upper 95% CI

21 50 11 0.78 0.0586 0.673 0.904

46 39 29 0.20 0.0566 0.115 0.348

66 10 10 0.00 NaN NA NA

Site=Mediterranean, Period=P2

time n.risk n.event survival std.err lower 95% CI upper 95% CI

21 176 22 0.87500 0.02493 0.827479 0.9252

25 154 83 0.40341 0.03698 0.337069 0.4828

39 71 8 0.35795 0.03614 0.293696 0.4363

41 63 9 0.30682 0.03476 0.245720 0.3831

45 54 46 0.04545 0.01570 0.023097 0.0895

60 8 5 0.01705 0.00976 0.005551 0.0523

66 3 1 0.01136 0.00799 0.002865 0.0451

89 2 1 0.00568 0.00567 0.000805 0.0401

132 1 1 0.00000 NaN NA NA

Site=Oceanic, Period=P1

time n.risk n.event survival std.err lower 95% CI upper 95% CI

21 34 9 0.7353 0.0757 0.60100 0.900

42 25 10 0.4412 0.0852 0.30222 0.644

63 15 8 0.2059 0.0693 0.10639 0.398

84 7 3 0.1176 0.0553 0.04686 0.295

105 4 2 0.0588 0.0404 0.01533 0.226

126 2 1 0.0294 0.0290 0.00427 0.203

Site=Oceanic, Period=P2

time n.risk n.event survival std.err lower 95% CI upper 95% CI

21 119 49 0.5882 0.04512 0.50614 0.6837

42 70 35 0.2941 0.04177 0.22266 0.3885

63 35 5 0.2521 0.03980 0.18500 0.3435

84 30 14 0.1345 0.03127 0.08523 0.2121

121 16 1 0.1261 0.03043 0.07854 0.2023

123 15 1 0.1176 0.02954 0.07193 0.1924

163 14 4 0.0840 0.02543 0.04643 0.1521

184 10 4 0.0504 0.02006 0.02312 0.1100

205 6 2 0.0336 0.01652 0.01283 0.0881

207 4 2 0.0168 0.01178 0.00425 0.0664

247 2 1 0.0084 0.00837 0.00119 0.0592

559 1 1 0.0000 NaN NA NA

***1.3 Data for plotting the Fig. 10 (c)***

Call: survfit(formula = Surv(ALiveDays, Status) ~ Site + DiamClass3.st,

data = surviv2DF[surviv2DF$Topology.st == "root", ])

Site=Continental, DiamClass3.st=0-1

time n.risk n.event survival std.err lower 95% CI upper 95% CI

24 183 1 0.99454 0.00545 0.983912 1.0000

26 182 1 0.98907 0.00769 0.974122 1.0000

28 181 16 0.90164 0.02201 0.859509 0.9458

33 165 1 0.89617 0.02255 0.853052 0.9415

35 164 36 0.69945 0.03389 0.636081 0.7691

44 127 38 0.49017 0.03704 0.422693 0.5684

56 89 11 0.42959 0.03669 0.363371 0.5079

61 78 1 0.42408 0.03663 0.358032 0.5023

63 77 3 0.40756 0.03642 0.342068 0.4856

64 74 2 0.39654 0.03626 0.331472 0.4744

72 65 9 0.34163 0.03556 0.278585 0.4190

73 56 6 0.30503 0.03475 0.243991 0.3813

84 50 2 0.29283 0.03441 0.232584 0.3687

91 48 4 0.26843 0.03364 0.209968 0.3432

95 44 1 0.26233 0.03342 0.204357 0.3367

105 43 3 0.24402 0.03272 0.187630 0.3174

133 40 1 0.23792 0.03247 0.182092 0.3109

146 39 1 0.23182 0.03220 0.176573 0.3044

175 38 2 0.21962 0.03164 0.165594 0.2913

189 36 1 0.21352 0.03134 0.160135 0.2847

190 34 2 0.20096 0.03073 0.148915 0.2712

201 32 3 0.18212 0.02971 0.132276 0.2508

207 29 1 0.17584 0.02935 0.126784 0.2439

217 28 1 0.16956 0.02896 0.121321 0.2370

219 27 1 0.16328 0.02856 0.115888 0.2301

236 26 1 0.15700 0.02815 0.110486 0.2231

239 25 4 0.13188 0.02630 0.089220 0.1949

245 21 1 0.12560 0.02578 0.083997 0.1878

274 19 4 0.09916 0.02350 0.062314 0.1578

283 15 13 0.01322 0.00925 0.003355 0.0521

298 2 1 0.00661 0.00658 0.000941 0.0464

Site=Continental, DiamClass3.st=1-2

time n.risk n.event survival std.err lower 95% CI upper 95% CI

26 257 3 0.9883 0.00670 0.97528 1.0000

28 254 27 0.8833 0.02003 0.84487 0.9234

35 227 12 0.8366 0.02306 0.79257 0.8830

38 215 1 0.8327 0.02328 0.78828 0.8796

44 214 55 0.6187 0.03030 0.56206 0.6810

56 159 8 0.5875 0.03071 0.53034 0.6509

61 151 5 0.5681 0.03090 0.51065 0.6320

63 146 3 0.5564 0.03099 0.49888 0.6206

64 143 1 0.5525 0.03102 0.49496 0.6168

72 141 29 0.4389 0.03100 0.38216 0.5040

73 112 12 0.3919 0.03050 0.33642 0.4565

84 100 4 0.3762 0.03027 0.32130 0.4405

89 96 2 0.3684 0.03014 0.31376 0.4324

99 94 9 0.3331 0.02946 0.28007 0.3961

101 85 1 0.3292 0.02937 0.27635 0.3921

105 84 5 0.3096 0.02890 0.25780 0.3717

112 79 1 0.3057 0.02880 0.25411 0.3677

123 78 1 0.3017 0.02870 0.25042 0.3636

127 77 2 0.2939 0.02848 0.24305 0.3554

133 75 3 0.2821 0.02814 0.23204 0.3431

146 72 2 0.2743 0.02790 0.22473 0.3348

151 70 1 0.2704 0.02777 0.22108 0.3307

173 69 1 0.2665 0.02765 0.21744 0.3266

175 68 1 0.2625 0.02752 0.21380 0.3224

189 67 1 0.2586 0.02738 0.21016 0.3183

190 61 3 0.2459 0.02700 0.19829 0.3050

201 58 9 0.2078 0.02563 0.16312 0.2646

207 49 1 0.2035 0.02546 0.15926 0.2601

211 48 2 0.1950 0.02510 0.15156 0.2510

239 46 2 0.1866 0.02471 0.14390 0.2419

245 44 4 0.1696 0.02387 0.12870 0.2235

273 34 2 0.1596 0.02349 0.11962 0.2130

274 30 9 0.1117 0.02118 0.07706 0.1620

283 21 16 0.0266 0.01154 0.01136 0.0623

302 4 2 0.0133 0.00881 0.00363 0.0487

318 2 2 0.0000 NaN NA NA

Site=Continental, DiamClass3.st=2-5

time n.risk n.event survival std.err lower 95% CI upper 95% CI

28 48 5 0.8958 0.0441 0.8135 0.987

35 43 1 0.8750 0.0477 0.7863 0.974

44 42 10 0.6667 0.0680 0.5458 0.814

56 32 1 0.6458 0.0690 0.5238 0.796

72 31 6 0.5208 0.0721 0.3971 0.683

73 25 1 0.5000 0.0722 0.3768 0.663

84 24 2 0.4583 0.0719 0.3370 0.623

95 22 1 0.4375 0.0716 0.3174 0.603

105 21 3 0.3750 0.0699 0.2603 0.540

112 18 2 0.3333 0.0680 0.2234 0.497

219 15 1 0.3111 0.0670 0.2039 0.475

245 14 2 0.2667 0.0644 0.1661 0.428

274 11 5 0.1455 0.0533 0.0710 0.298

283 6 1 0.1212 0.0496 0.0544 0.270

302 5 1 0.0970 0.0452 0.0389 0.242

318 4 2 0.0485 0.0331 0.0127 0.185

Site=Mediterranean, DiamClass3.st=0-1

time n.risk n.event survival std.err lower 95% CI upper 95% CI

21 86 9 0.8953 0.0330 0.83294 0.9624

25 77 34 0.5000 0.0539 0.40475 0.6177

39 43 6 0.4302 0.0534 0.33735 0.5487

41 37 3 0.3953 0.0527 0.30442 0.5134

45 34 22 0.1395 0.0374 0.08256 0.2358

46 12 6 0.0698 0.0275 0.03225 0.1509

60 6 4 0.0233 0.0163 0.00591 0.0915

66 2 1 0.0116 0.0116 0.00166 0.0816

Site=Mediterranean, DiamClass3.st=1-2

time n.risk n.event survival std.err lower 95% CI upper 95% CI

21 72 6 0.9167 0.0326 0.8550 0.983

25 66 24 0.5833 0.0581 0.4799 0.709

39 42 2 0.5556 0.0586 0.4519 0.683

41 40 2 0.5278 0.0588 0.4242 0.657

45 38 15 0.3194 0.0549 0.2280 0.448

46 23 16 0.0972 0.0349 0.0481 0.197

60 7 1 0.0833 0.0326 0.0387 0.179

66 6 6 0.0000 NaN NA NA

Site=Mediterranean, DiamClass3.st=2-5

time n.risk n.event survival std.err lower 95% CI upper 95% CI

25 19 2 0.895 0.0704 0.7669 1.000

41 17 1 0.842 0.0837 0.6931 1.000

45 16 6 0.526 0.1145 0.3435 0.806

46 10 3 0.368 0.1107 0.2045 0.664

66 7 4 0.158 0.0837 0.0559 0.446

89 3 1 0.105 0.0704 0.0284 0.390

132 1 1 0.000 NaN NA NA

Site=Oceanic, DiamClass3.st=0-1

time n.risk n.event survival std.err lower 95% CI upper 95% CI

21 73 11 0.8493 0.0419 0.77109 0.9355

41 62 1 0.8356 0.0434 0.75478 0.9251

42 60 29 0.4317 0.0584 0.33122 0.5628

62 31 1 0.4178 0.0581 0.31808 0.5488

63 30 8 0.3064 0.0544 0.21639 0.4338

84 22 7 0.2089 0.0480 0.13321 0.3276

105 15 2 0.1811 0.0454 0.11072 0.2961

121 13 1 0.1671 0.0440 0.09974 0.2800

126 12 1 0.1532 0.0425 0.08895 0.2638

163 11 4 0.0975 0.0350 0.04824 0.1970

184 7 2 0.0696 0.0300 0.02990 0.1622

205 5 2 0.0418 0.0236 0.01380 0.1265

207 3 1 0.0279 0.0194 0.00710 0.1092

247 2 1 0.0139 0.0138 0.00199 0.0975

559 1 1 0.0000 NaN NA NA

Site=Oceanic, DiamClass3.st=1-2

time n.risk n.event survival std.err lower 95% CI upper 95% CI

21 70 33 0.5286 0.0597 0.42366 0.659

42 37 17 0.2857 0.0540 0.19727 0.414

63 20 6 0.2000 0.0478 0.12519 0.320

84 14 5 0.1286 0.0400 0.06987 0.237

105 9 2 0.1000 0.0359 0.04952 0.202

123 7 1 0.0857 0.0335 0.03988 0.184

126 6 1 0.0714 0.0308 0.03069 0.166

184 5 2 0.0429 0.0242 0.01417 0.130

207 3 1 0.0286 0.0199 0.00729 0.112

417 1 1 0.0000 NaN NA NA

***1.4 Data for plotting the Fig. 10 (d)***

Call: survfit(formula = Surv(ALiveDays, Status) ~ Site + TopoDiam,

data = surviv3DF)

Site=Continental, TopoDiam=lat\_0-1

time n.risk n.event survival std.err lower 95% CI upper 95% CI

28 87 4 0.9540 0.0225 0.9110 0.999

35 83 21 0.7126 0.0485 0.6236 0.814

44 60 14 0.5464 0.0538 0.4504 0.663

56 46 3 0.5107 0.0541 0.4150 0.629

72 34 14 0.3004 0.0536 0.2118 0.426

105 20 4 0.2403 0.0506 0.1591 0.363

201 16 8 0.1202 0.0393 0.0633 0.228

283 6 3 0.0601 0.0314 0.0216 0.167

318 3 1 0.0401 0.0266 0.0109 0.147

Site=Continental, TopoDiam=root\_0-1

time n.risk n.event survival std.err lower 95% CI upper 95% CI

24 183 1 0.99454 0.00545 0.983912 1.0000

26 182 1 0.98907 0.00769 0.974122 1.0000

28 181 16 0.90164 0.02201 0.859509 0.9458

33 165 1 0.89617 0.02255 0.853052 0.9415

35 164 36 0.69945 0.03389 0.636081 0.7691

44 127 38 0.49017 0.03704 0.422693 0.5684

56 89 11 0.42959 0.03669 0.363371 0.5079

61 78 1 0.42408 0.03663 0.358032 0.5023

63 77 3 0.40756 0.03642 0.342068 0.4856

64 74 2 0.39654 0.03626 0.331472 0.4744

72 65 9 0.34163 0.03556 0.278585 0.4190

73 56 6 0.30503 0.03475 0.243991 0.3813

84 50 2 0.29283 0.03441 0.232584 0.3687

91 48 4 0.26843 0.03364 0.209968 0.3432

95 44 1 0.26233 0.03342 0.204357 0.3367

105 43 3 0.24402 0.03272 0.187630 0.3174

133 40 1 0.23792 0.03247 0.182092 0.3109

146 39 1 0.23182 0.03220 0.176573 0.3044

175 38 2 0.21962 0.03164 0.165594 0.2913

189 36 1 0.21352 0.03134 0.160135 0.2847

190 34 2 0.20096 0.03073 0.148915 0.2712

201 32 3 0.18212 0.02971 0.132276 0.2508

207 29 1 0.17584 0.02935 0.126784 0.2439

217 28 1 0.16956 0.02896 0.121321 0.2370

219 27 1 0.16328 0.02856 0.115888 0.2301

236 26 1 0.15700 0.02815 0.110486 0.2231

239 25 4 0.13188 0.02630 0.089220 0.1949

245 21 1 0.12560 0.02578 0.083997 0.1878

274 19 4 0.09916 0.02350 0.062314 0.1578

283 15 13 0.01322 0.00925 0.003355 0.0521

298 2 1 0.00661 0.00658 0.000941 0.0464

Site=Continental, TopoDiam=lat\_1-2

time n.risk n.event survival std.err lower 95% CI upper 95% CI

28 38 2 0.947 0.0362 0.8790 1.000

35 36 1 0.921 0.0437 0.8392 1.000

44 35 14 0.553 0.0807 0.4151 0.736

56 21 1 0.526 0.0810 0.3893 0.712

72 20 13 0.184 0.0629 0.0943 0.360

157 7 1 0.158 0.0592 0.0758 0.329

201 6 1 0.132 0.0548 0.0581 0.298

283 4 4 0.000 NaN NA NA

Site=Continental, TopoDiam=root\_1-2

time n.risk n.event survival std.err lower 95% CI upper 95% CI

26 257 3 0.9883 0.00670 0.97528 1.0000

28 254 27 0.8833 0.02003 0.84487 0.9234

35 227 12 0.8366 0.02306 0.79257 0.8830

38 215 1 0.8327 0.02328 0.78828 0.8796

44 214 55 0.6187 0.03030 0.56206 0.6810

56 159 8 0.5875 0.03071 0.53034 0.6509

61 151 5 0.5681 0.03090 0.51065 0.6320

63 146 3 0.5564 0.03099 0.49888 0.6206

64 143 1 0.5525 0.03102 0.49496 0.6168

72 141 29 0.4389 0.03100 0.38216 0.5040

73 112 12 0.3919 0.03050 0.33642 0.4565

84 100 4 0.3762 0.03027 0.32130 0.4405

89 96 2 0.3684 0.03014 0.31376 0.4324

99 94 9 0.3331 0.02946 0.28007 0.3961

101 85 1 0.3292 0.02937 0.27635 0.3921

105 84 5 0.3096 0.02890 0.25780 0.3717

112 79 1 0.3057 0.02880 0.25411 0.3677

123 78 1 0.3017 0.02870 0.25042 0.3636

127 77 2 0.2939 0.02848 0.24305 0.3554

133 75 3 0.2821 0.02814 0.23204 0.3431

146 72 2 0.2743 0.02790 0.22473 0.3348

151 70 1 0.2704 0.02777 0.22108 0.3307

173 69 1 0.2665 0.02765 0.21744 0.3266

175 68 1 0.2625 0.02752 0.21380 0.3224

189 67 1 0.2586 0.02738 0.21016 0.3183

190 61 3 0.2459 0.02700 0.19829 0.3050

201 58 9 0.2078 0.02563 0.16312 0.2646

207 49 1 0.2035 0.02546 0.15926 0.2601

211 48 2 0.1950 0.02510 0.15156 0.2510

239 46 2 0.1866 0.02471 0.14390 0.2419

245 44 4 0.1696 0.02387 0.12870 0.2235

273 34 2 0.1596 0.02349 0.11962 0.2130

274 30 9 0.1117 0.02118 0.07706 0.1620

283 21 16 0.0266 0.01154 0.01136 0.0623

302 4 2 0.0133 0.00881 0.00363 0.0487

318 2 2 0.0000 NaN NA NA

Site=Mediterranean, TopoDiam=lat\_0-1

time n.risk n.event survival std.err lower 95% CI upper 95% CI

17 42 3 0.9286 0.0397 0.8539 1.000

21 39 13 0.6190 0.0749 0.4883 0.785

25 26 18 0.1905 0.0606 0.1021 0.355

41 8 3 0.1190 0.0500 0.0523 0.271

45 5 2 0.0714 0.0397 0.0240 0.213

46 3 3 0.0000 NaN NA NA

Site=Mediterranean, TopoDiam=root\_0-1

time n.risk n.event survival std.err lower 95% CI upper 95% CI

21 86 9 0.8953 0.0330 0.83294 0.9624

25 77 34 0.5000 0.0539 0.40475 0.6177

39 43 6 0.4302 0.0534 0.33735 0.5487

41 37 3 0.3953 0.0527 0.30442 0.5134

45 34 22 0.1395 0.0374 0.08256 0.2358

46 12 6 0.0698 0.0275 0.03225 0.1509

60 6 4 0.0233 0.0163 0.00591 0.0915

66 2 1 0.0116 0.0116 0.00166 0.0816

Site=Mediterranean, TopoDiam=lat\_1-2

time n.risk n.event survival std.err lower 95% CI upper 95% CI

17 13 1 0.9231 0.0739 0.7890 1.000

21 12 5 0.5385 0.1383 0.3255 0.891

25 7 5 0.1538 0.1001 0.0430 0.550

45 2 1 0.0769 0.0739 0.0117 0.506

46 1 1 0.0000 NaN NA NA

Site=Mediterranean, TopoDiam=root\_1-2

time n.risk n.event survival std.err lower 95% CI upper 95% CI

21 72 6 0.9167 0.0326 0.8550 0.983

25 66 24 0.5833 0.0581 0.4799 0.709

39 42 2 0.5556 0.0586 0.4519 0.683

41 40 2 0.5278 0.0588 0.4242 0.657

45 38 15 0.3194 0.0549 0.2280 0.448

46 23 16 0.0972 0.0349 0.0481 0.197

60 7 1 0.0833 0.0326 0.0387 0.179

66 6 6 0.0000 NaN NA NA

***1.5 Model fit corresponding to Fig. 10 (a) and (b)***

> summary (coxfit1)

Call:

coxph(formula = Surv(ALiveDays, Status) ~ Site + DiamClass3.st +

Period, data = surviv2DF, method = "breslow")

n= 1123, number of events= 963

coef exp(coef) se(coef) z Pr(>|z|)

SiteMediterranean 1.30665 3.69378 0.09144 14.289 < 2e-16 \*\*\*

SiteOceanic 0.72008 2.05459 0.09312 7.733 1.05e-14 \*\*\*

DiamClass3.st1-2 -0.01460 0.98551 0.06858 -0.213 0.83140

DiamClass3.st2-5 -0.43016 0.65041 0.13226 -3.252 0.00114 \*\*

PeriodP1 0.25955 1.29635 0.18791 1.381 0.16719

PeriodP2 0.62532 1.86885 0.15940 3.923 8.74e-05 \*\*\*

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

***1.6 Model fit corresponding to Fig. 10 (c)***

To test the effect of root diameter, we first used the global model including all of the three sites and then made one model per site.

***1.6.1 Global model***

> summary (coxfit3r)

Call:

coxph(formula = Surv(ALiveDays, Status) ~ Site + DiamClass3.st,

data = surviv2DF[surviv2DF$Topology.st == "root", ], method = "breslow")

n= 872, number of events= 779

coef exp(coef) se(coef) z Pr(>|z|)

SiteMediterranean 1.09144 2.97857 0.09767 11.175 < 2e-16 \*\*\*

SiteOceanic 0.58851 1.80131 0.09851 5.974 2.31e-09 \*\*\*

DiamClass3.st1-2 -0.08559 0.91797 0.07654 -1.118 0.2635

DiamClass3.st2-5 -0.42803 0.65179 0.13711 -3.122 0.0018 \*\*

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

***1.6.1 Model for the site Continental***

**# 3 local models:**

> summary (coxfit3Cr)

Call:

coxph(formula = Surv(ALiveDays, Status) ~ DiamClass3.st, data = surviv2DF[surviv2DF$Site ==

"Continental" & surviv2DF$Topology.st == "root", ], method = "breslow")

n= 547, number of events= 458

coef exp(coef) se(coef) z Pr(>|z|)

DiamClass3.st1-2 -0.1901 0.8269 0.1000 -1.901 0.0574 .

DiamClass3.st2-5 -0.4700 0.6250 0.1714 -2.742 0.0061 \*\*

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

***1.6.2 Model for the site Mediterranean***

> coxfit3Mr = coxph (Surv (ALiveDays, Status) ~ DiamClass3.st , data = surviv2DF[surviv2DF$Site == "Mediterranean"&surviv2DF$Topology.st == "root",], method = "breslow")

> summary (coxfit3Mr)

Call:

coxph(formula = Surv(ALiveDays, Status) ~ DiamClass3.st, data = surviv2DF[surviv2DF$Site ==

"Mediterranean" & surviv2DF$Topology.st == "root", ], method = "breslow")

n= 177, number of events= 175

coef exp(coef) se(coef) z Pr(>|z|)

DiamClass3.st1-2 -0.2678 0.7651 0.1623 -1.650 0.09895 .

DiamClass3.st2-5 -0.9236 0.3971 0.2746 -3.363 0.00077 \*\*\*

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

***1.6.3 Model for the site Oceanic***

> coxfit3Or = coxph (Surv (ALiveDays, Status) ~ DiamClass3.st , data = surviv2DF[surviv2DF$Site == "Oceanic"&surviv2DF$Topology.st == "root",], method = "breslow")

> summary (coxfit3Or)

Call:

coxph(formula = Surv(ALiveDays, Status) ~ DiamClass3.st, data = surviv2DF[surviv2DF$Site ==

"Oceanic" & surviv2DF$Topology.st == "root", ], method = "breslow")

n= 148, number of events= 146

coef exp(coef) se(coef) z Pr(>|z|)

DiamClass3.st1-2 0.3018 1.3522 0.1701 1.775 0.0760 .

DiamClass3.st2-5 0.8366 2.3086 0.4685 1.786 0.0741 .

***1.7 Model fit corresponding to Fig. 10 (d)***

To test the effect of root topology, we excluded the data of 2-5 mm and the site Oceanic due to the insufficiency of data. Then, we used one model per site and per diameter class to test the effect of root topology.

***1.7.1 Model for the site Continental and diameter class of ]0, 1] mm***

> coxfit4fineC = coxph (Surv (ALiveDays, Status)~ Topology.st , data = surviv2DF[surviv2DF$Site == "Continental"&surviv2DF$DiamClass3.st == "0-1",], method = "breslow")

> summary (coxfit4fineC)

Call:

coxph(formula = Surv(ALiveDays, Status) ~ Topology.st, data = surviv2DF[surviv2DF$Site ==

"Continental" & surviv2DF$DiamClass3.st == "0-1", ], method = "breslow")

n= 351, number of events= 244

coef exp(coef) se(coef) z Pr(>|z|)

Topology.stroot 0.1321 1.1412 0.1410 0.937 0.349

***1.7.2 Model for the site Mediterranean and diameter class of ]0, 1] mm***

> coxfit4fineM = coxph (Surv (ALiveDays, Status)~ Topology.st , data = surviv2DF[surviv2DF$Site == "Mediterranean"&surviv2DF$DiamClass3.st == "0-1",], method = "breslow")

> summary (coxfit4fineM)

Call:

coxph(formula = Surv(ALiveDays, Status) ~ Topology.st, data = surviv2DF[surviv2DF$Site ==

"Mediterranean" & surviv2DF$DiamClass3.st == "0-1", ], method = "breslow")

n= 128, number of events= 127

coef exp(coef) se(coef) z Pr(>|z|)

Topology.stroot -0.5896 0.5545 0.1936 -3.045 0.00233 \*\*

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

***1.7.3 Model for the site Continental and diameter class of ]1, 2] mm***

> coxfit4mediumC = coxph (Surv (ALiveDays, Status)~ Topology.st , data = surviv2DF[surviv2DF$Site == "Continental"&surviv2DF$DiamClass3.st == "1-2",], method = "breslow")

> summary(coxfit4mediumC)

Call:

coxph(formula = Surv(ALiveDays, Status) ~ Topology.st, data = surviv2DF[surviv2DF$Site ==

"Continental" & surviv2DF$DiamClass3.st == "1-2", ], method = "breslow")

n= 322, number of events= 279

coef exp(coef) se(coef) z Pr(>|z|)

Topology.stroot -0.1302 0.8780 0.1774 -0.734 0.463

***1.7.4 For the site Mediterranean and diameter class of ]1, 2] mm***

> coxfit4mediumM = coxph (Surv (ALiveDays, Status)~ Topology.st , data = surviv2DF[surviv2DF$Site == "Mediterranean"&surviv2DF$DiamClass3.st == "1-2",], method = "breslow")

> summary (coxfit4mediumM)

Call:

coxph(formula = Surv(ALiveDays, Status) ~ Topology.st, data = surviv2DF[surviv2DF$Site ==

"Mediterranean" & surviv2DF$DiamClass3.st == "1-2", ], method = "breslow")

n= 85, number of events= 85

coef exp(coef) se(coef) z Pr(>|z|)

Topology.stroot -0.8613 0.4226 0.3090 -2.788 0.00531 \*\*

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1