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| 1. MutSpec of Actinipterigii versus temperature and longevity (Time of maturation) | 1. **all nominally significant spearman rank correlations between fractions of 4 transitions and temp:**   **N = 128**   * Spearman's rank correlation rho   data: TemperMut$A\_G and TemperMut$Temperature  S = 474663, p-value = 3.321e-05  alternative hypothesis: true rho is not equal to 0  sample estimates:  rho  -0.3581037   * Spearman's rank correlation rho   data: TemperMut$T\_C and TemperMut$Temperature  S = 256954, p-value = 0.002522  alternative hypothesis: true rho is not equal to 0  sample estimates:  rho  0.2648037  Spearman's rank correlation rho  data: allparameters$TCdivAG and allparameters$Temperature  S = 179782, p-value = 1.654e-07  alternative hypothesis: true rho is not equal to 0  sample estimates:  rho  0.447675   * **other transitions give p-value >0,1**  1. **multiple model between temp and fractions of T\_C + A\_G:**     **N=128**   * Call:   lm(formula = Temperature ~ scale(T\_C) + scale(A\_G), data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -19.232 -5.410 0.627 5.385 13.138  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 17.2395 0.6029 28.594 < 2e-16 \*\*\*  scale(T\_C) 1.6769 0.6097 2.750 0.006835 \*\*  scale(A\_G) -2.4375 0.6097 -3.998 0.000109 \*\*\*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 6.821 on 125 degrees of freedom  Multiple R-squared: 0.1753, Adjusted R-squared: 0.1621  F-statistic: 13.28 on 2 and 125 DF, p-value: 5.869e-06  **N=65**   * Call:   lm(formula = Temperature ~ scale(T\_C) + scale(A\_G), data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -19.3869 -4.7812 0.4572 4.5021 11.5473  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 15.9015 0.8532 18.638 < 2e-16 \*\*\*  scale(T\_C) 2.9136 0.8660 3.364 0.00132 \*\*  scale(A\_G) -1.5153 0.8660 -1.750 0.08511 .  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 6.879 on 62 degrees of freedom  Multiple R-squared: 0.2053, Adjusted R-squared: 0.1796  F-statistic: 8.007 on 2 and 62 DF, p-value: 0.0008065   1. **all nominally significant spearman rank correlations between fractions of 4 transitions and longevity:**   **N=106**   * Spearman's rank correlation rho   data: MATUTmmut$G\_C and MATUTmmut$Tm  S = 242544, p-value = 0.0222  alternative hypothesis: true rho is not equal to 0  sample estimates:  rho  -0.2219755   * **other transitions give p-value >0,1**  1. **all multiple models between fractions of T\_C and temp + longevity:**   **N=65**   * Call:   lm(formula = T\_C ~ scale(Temperature) \* scale(Tm), data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -0.115771 -0.040550 -0.007716 0.039935 0.136724  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.131507 0.008055 16.325 < 2e-16 \*\*\*  scale(Temperature) 0.024866 0.008083 3.076 0.00313 \*\*  scale(Tm) -0.008903 0.008722 -1.021 0.31142  scale(Temperature):scale(Tm) -0.000811 0.009005 -0.090 0.92854  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.062 on 61 degrees of freedom  Multiple R-squared: 0.1815, Adjusted R-squared: 0.1412  F-statistic: 4.508 on 3 and 61 DF, p-value: 0.006387   * Call:   lm(formula = T\_C ~ scale(Temperature) + scale(Tm), data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -0.11592 -0.04111 -0.00788 0.03984 0.13706  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.131723 0.007628 17.269 < 2e-16 \*\*\*  scale(Temperature) 0.024931 0.007985 3.122 0.00273 \*\*  scale(Tm) -0.008600 0.007985 -1.077 0.28564  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.0615 on 62 degrees of freedom  Multiple R-squared: 0.1814, Adjusted R-squared: 0.1549  F-statistic: 6.867 on 2 and 62 DF, p-value: 0.002023   * Call:   lm(formula = T\_C ~ scale(Temperature), data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -0.111978 -0.042312 -0.003029 0.039048 0.144335  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.131723 0.007637 17.247 < 2e-16 \*\*\*  scale(Temperature) 0.027259 0.007697 3.542 0.000755 \*\*\*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.06158 on 63 degrees of freedom  Multiple R-squared: 0.166, Adjusted R-squared: 0.1528  F-statistic: 12.54 on 1 and 63 DF, p-value: 0.0007547   * Call:   lm(formula = A\_G ~ scale(Temperature) + scale(Tm), data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -0.083471 -0.026393 -0.007603 0.014118 0.135875  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.068819 0.006021 11.430 <2e-16 \*\*\*  scale(Temperature ) -0.014254 0.006303 -2.261 0.0273 \*  scale(Tm) -0.007483 0.006303 -1.187 0.2397  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.04854 on 62 degrees of freedom  Multiple R-squared: 0.08108, Adjusted R-squared: 0.05144  F-statistic: 2.735 on 2 and 62 DF, p-value: 0.07271   * Call:   lm(formula = A\_G ~ scale(Temperature), data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -0.075906 -0.035903 -0.004855 0.017169 0.133115  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.068819 0.006041 11.393 <2e-16 \*\*\*  scale(Temperature) -0.012228 0.006088 -2.009 0.0489 \*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.0487 on 63 degrees of freedom  Multiple R-squared: 0.06019, Adjusted R-squared: 0.04527  F-statistic: 4.035 on 1 and 63 DF, p-value: 0.04886   1. **all multiple models between TCdivAG and temp + longevity**   **N=123 (no NULL in A\_G and T\_C)**   * Call:   lm(formula = log2(TCdivAG) ~ scale(Temperature), data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -3.1906 -0.8537 -0.1554 0.7659 4.5097  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 1.2664 0.1194 10.607 < 2e-16 \*\*\*  scale(Temperature) 0.5674 0.1199 4.733 6.06e-06 \*\*\*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 1.324 on 121 degrees of freedom  Multiple R-squared: 0.1562, Adjusted R-squared: 0.1492  F-statistic: 22.4 on 1 and 121 DF, p-value: 6.056e-06   * Call:   lm(formula = Temperature ~ scale(TCdivAG), data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -16.3598 -5.5191 0.0238 6.6592 12.1481  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 17.2793 0.6683 25.855 <2e-16 \*\*\*  scale(TCdivAG) 1.2923 0.6711 1.926 0.0565 .  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 7.412 on 121 degrees of freedom  Multiple R-squared: 0.02974, Adjusted R-squared: 0.02172  F-statistic: 3.709 on 1 and 121 DF, p-value: 0.05648  **N=62 (no NULL)**   * Call:   lm(formula = Temperature ~ scale(TCdivAG), data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -15.4545 -5.5774 -0.0962 5.4424 12.2630  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 16.0129 0.9507 16.844 <2e-16 \*\*\*  scale(TCdivAG) 1.8008 0.9584 1.879 0.0651 .  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 7.486 on 60 degrees of freedom  Multiple R-squared: 0.05557, Adjusted R-squared: 0.03983  F-statistic: 3.53 on 1 and 60 DF, p-value: 0.06512   * Call:   lm(formula = log2(TCdivAG) ~ scale(Temperature) + scale(Tm),  data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -3.1503 -0.7421 -0.1851 0.7708 3.2747  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 1.11377 0.16982 6.559 1.51e-08 \*\*\*  scale(Temperature) 0.58133 0.17790 3.268 0.00181 \*\*  scale(Tm) 0.03231 0.17790 0.182 0.85649  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 1.337 on 59 degrees of freedom  Multiple R-squared: 0.1597, Adjusted R-squared: 0.1313  F-statistic: 5.608 on 2 and 59 DF, p-value: 0.005891 | VertebratePolymorphisms.MutSpecComparisons.Ecology.Actinopterygii.MutSpectrum.R  VertebratePolymorphisms.MutSpecComparisons.Ecology.Actinopterygii.FishBaseData.R | [Fig1A](https://github.com/polarsong/mtDNA_mutspectrum/blob/TemperatureVSVertabrates/Body/4Figures/VertebratePolymorphisms.MutSpecComparisons.Analyses.Ecology.Actinopterygii.FishBaseData.FIGURE1A.pdf)  [Fig1B](https://github.com/polarsong/mtDNA_mutspectrum/blob/TemperatureVSVertabrates/Body/4Figures/VertebratePolymorphisms.MutSpecComparisons.Analyses.Ecology.Actinopterygii.FishBaseData.FIGURE1B.pdf)  [Fig1C](https://github.com/polarsong/mtDNA_mutspectrum/blob/TemperatureVSVertabrates/Body/4Figures/VertebratePolymorphisms.MutSpecComparisons.Analyses.Ecology.Actinopterygii.FishBaseData.FIGURE1C.pdf) |
| 1. Whole genome of Actinipterigii versus temperature and longevity (Time of maturation) | 1. **whole genome analysis vs temperature ALL genes**  * Spearman's rank correlation rho   data: log2(SynNuc$Temperature) and SynNuc$FrA  S = 5335566, p-value = 0.03301  alternative hypothesis: true rho is not equal to 0  sample estimates:  rho  0.1172215   * Spearman's rank correlation rho   data: log2(SynNuc$Temperature) and SynNuc$FrT  S = 6966996, p-value = 0.005369  alternative hypothesis: true rho is not equal to 0  sample estimates:  rho  -0.1527014   * Spearman's rank correlation rho   data: log2(SynNuc$Temperature) and SynNuc$FrG  S = 7546431, p-value = 4.711e-06  alternative hypothesis: true rho is not equal to 0  sample estimates:  rho  -0.2485698   * Spearman's rank correlation rho   data: log2(SynNuc$Temperature) and SynNuc$FrC  S = 5248321, p-value = 0.01655  alternative hypothesis: true rho is not equal to 0  sample estimates:  rho  0.1316563   1. **Fraction of nucleotides versus Temp and longevity**   Call:  lm(formula = FrT ~ scale(Temperature) + scale(Tm), data = SynNuc)  Residuals:  Min 1Q Median 3Q Max  -0.097838 -0.023190 -0.005652 0.022639 0.178615  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.224467 0.004409 50.908 < 2e-16 \*\*\*  scale(Temperature) -0.015662 0.004161 -3.764 0.000254 \*\*\*  scale(Tm) -0.006686 0.003660 -1.827 0.070052 .  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.04743 on 128 degrees of freedom  (4973 observations deleted due to missingness)  Multiple R-squared: 0.1051, Adjusted R-squared: 0.09109  F-statistic: 7.514 on 2 and 128 DF, p-value: 0.0008213  Call:  lm(formula = FrT ~ log2(Temperature + 2) \* log2(Tm), data = SynNuc)  Residuals:  Min 1Q Median 3Q Max  -0.102887 -0.022056 -0.006305 0.022909 0.183016  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.422770 0.050387 8.390 8.02e-14 \*\*\*  log2(Temperature + 2) -0.043535 0.011464 -3.798 0.000225 \*\*\*  log2(Tm) -0.055592 0.019986 -2.782 0.006234 \*\*  log2(Temperature + 2):log2(Tm) 0.011796 0.004637 2.544 0.012156 \*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.04706 on 127 degrees of freedom  (4973 observations deleted due to missingness)  Multiple R-squared: 0.126, Adjusted R-squared: 0.1053  F-statistic: 6.102 on 3 and 127 DF, p-value: 0.0006525  Call:  lm(formula = FrG ~ log2(Temperature + 2) + log2(Tm), data = SynNuc)  Residuals:  Min 1Q Median 3Q Max  -0.05042 -0.01562 -0.00305 0.01397 0.13146  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.120175 0.013771 8.727 1.2e-14 \*\*\*  log2(Temperature + 2) -0.010514 0.003016 -3.487 0.000671 \*\*\*  log2(Tm) -0.006856 0.001921 -3.568 0.000506 \*\*\*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.02726 on 128 degrees of freedom  (4973 observations deleted due to missingness)  Multiple R-squared: 0.1307, Adjusted R-squared: 0.1172  F-statistic: 9.626 on 2 and 128 DF, p-value: 0.0001275  Call:  lm(formula = FrA ~ log2(Temperature + 2) + log2(Tm), data = SynNuc)  Residuals:  Min 1Q Median 3Q Max  -0.092440 -0.034027 -0.007309 0.025683 0.182709  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.249276 0.026709 9.333 4.08e-16 \*\*\*  log2(Temperature + 2) 0.023023 0.005849 3.936 0.000135 \*\*\*  log2(Tm) 0.014498 0.003726 3.891 0.000160 \*\*\*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.05286 on 128 degrees of freedom  (4973 observations deleted due to missingness)  Multiple R-squared: 0.1562, Adjusted R-squared: 0.143  F-statistic: 11.85 on 2 and 128 DF, p-value: 1.904e-05   1. **Skews vs temp and maturation**   Call:  lm(formula = GtoASkew ~ log2(Temperature + 2) + log2(Tm), data = SynNuc)  Residuals:  Min 1Q Median 3Q Max  -0.22989 -0.07795 -0.00505 0.07850 0.51807  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) -0.39217 0.06129 -6.399 2.70e-09 \*\*\*  log2(Temperature + 2) -0.05852 0.01342 -4.361 2.64e-05 \*\*\*  log2(Tm) -0.03714 0.00855 -4.344 2.82e-05 \*\*\*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.1213 on 128 degrees of freedom  (4973 observations deleted due to missingness)  Multiple R-squared: 0.1863, Adjusted R-squared: 0.1735  F-statistic: 14.65 on 2 and 128 DF, p-value: 1.866e-06  Call:  lm(formula = CtoTSkew ~ log2(Temperature + 2) + log2(Tm), data = SynNuc)  Residuals:  Min 1Q Median 3Q Max  -0.60995 -0.06334 0.03624 0.09402 0.32465  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) -0.006336 0.082967 -0.076 0.9392  log2(Temperature + 2) 0.043809 0.018168 2.411 0.0173 \*  log2(Tm) 0.011212 0.011575 0.969 0.3345  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.1642 on 128 degrees of freedom  (4973 observations deleted due to missingness)  Multiple R-squared: 0.04399, Adjusted R-squared: 0.02905  F-statistic: 2.945 on 2 and 128 DF, p-value: 0.05618 | WholeGenomeAnalyses.EcologyAndMutSpecChordata.Actinopterygii.FishBaseData.R | [Fig2A](https://github.com/polarsong/mtDNA_mutspectrum/blob/TemperatureVSVertabrates/Body/4Figures/WholeGenomeAnalyses.NucContent.Analyses.Ecology.Actinopterygii.FishBaseData.FIGURE2A.pdf) |
|  | 1. **multiple models with fraction of T in all hib**  * Call:   lm(formula = FrT ~ scale(GenerationLength\_d) + scale(Hib.unconfirmedHib),  data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -0.105465 -0.032644 -0.005693 0.031518 0.119845  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.193148 0.001660 116.352 < 2e-16 \*\*\*  scale(GenerationLength\_d) -0.010646 0.001663 -6.404 2.92e-10 \*\*\*  scale(Hib.unconfirmedHib) 0.013503 0.001663 8.122 2.33e-15 \*\*\*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.04229 on 646 degrees of freedom  Multiple R-squared: 0.1467, Adjusted R-squared: 0.1441  F-statistic: 55.53 on 2 and 646 DF, p-value: < 2.2e-16   1. **multiple models with fraction of T in all day**   Call:  lm(formula = FrT ~ scale(GenerationLength\_d) + scale(Daily.unconfirmedDaily),  data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -0.107719 -0.033945 -0.007045 0.032663 0.132343  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.193148 0.001735 111.311 < 2e-16 \*\*\*  scale(GenerationLength\_d) -0.010686 0.001748 -6.114 1.68e-09 \*\*\*  scale(Daily.unconfirmedDaily) 0.004142 0.001748 2.370 0.0181 \*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.04421 on 646 degrees of freedom  Multiple R-squared: 0.06767, Adjusted R-squared: 0.06479  F-statistic: 23.45 on 2 and 646 DF, p-value: 1.481e-10   1. **multiple models with fraction of T in all MarsMono**   Call:  lm(formula = FrT ~ scale(GenerationLength\_d) + scale(MarsMono),  data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -0.106884 -0.033829 -0.006269 0.032672 0.133243  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.193148 0.001727 111.848 < 2e-16 \*\*\*  scale(GenerationLength\_d) -0.010316 0.001745 -5.910 5.52e-09 \*\*\*  scale(MarsMono) 0.006023 0.001745 3.451 0.000594 \*\*\*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.04399 on 646 degrees of freedom  Multiple R-squared: 0.07659, Adjusted R-squared: 0.07373  F-statistic: 26.79 on 2 and 646 DF, p-value: 6.638e-12   1. multiple model between fraction of T and temperature + generation length   Call:  lm(formula = FrT ~ scale(GenerationLength\_d) + scale(Temper),  data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -0.127758 -0.035311 -0.001647 0.035553 0.111848  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.196165 0.003304 59.376 < 2e-16 \*\*\*  scale(GenerationLength\_d) -0.021853 0.004065 -5.376 1.93e-07 \*\*\*  scale(Temper) -0.006774 0.003271 -2.071 0.0395 \*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.04884 on 221 degrees of freedom  (425 observations deleted due to missingness)  Multiple R-squared: 0.1306, Adjusted R-squared: 0.1227  F-statistic: 16.59 on 2 and 221 DF, p-value: 1.933e-07   1. multiple model between fraction of T and cold species (mean temp 36.8)   Call:  lm(formula = FrT ~ scale(GenerationLength\_d) + scale(colddummy),  data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -0.122726 -0.033252 -0.005543 0.031394 0.119564  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.193148 0.001726 111.933 < 2e-16 \*\*\*  scale(GenerationLength\_d) -0.010730 0.001731 -6.199 1.02e-09 \*\*\*  scale(colddummy) 0.006220 0.001731 3.594 0.000351 \*\*\*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.04396 on 646 degrees of freedom  Multiple R-squared: 0.078, Adjusted R-squared: 0.07514  F-statistic: 27.32 on 2 and 646 DF, p-value: 4.058e-12   1. multiple model between fraction of T and all cold groups (incl. cold species <36.8)   Call:  lm(formula = FrT ~ log2(GenerationLength\_d) + scale(allcolddummy),  data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -0.124652 -0.029042 -0.003452 0.029476 0.120266  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.326964 0.016474 19.848 < 2e-16 \*\*\*  log2(GenerationLength\_d) -0.012105 0.001483 -8.164 1.70e-15 \*\*\*  scale(allcolddummy) 0.010043 0.001668 6.023 2.88e-09 \*\*\*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.04214 on 646 degrees of freedom  Multiple R-squared: 0.1527, Adjusted R-squared: 0.1501  F-statistic: 58.21 on 2 and 646 DF, p-value: < 2.2e-16  Call:  lm(formula = FrT ~ log2(GenerationLength\_d), data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -0.105628 -0.031770 -0.006374 0.032930 0.132364  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.338815 0.016796 20.173 <2e-16 \*\*\*  log2(GenerationLength\_d) -0.013177 0.001512 -8.718 <2e-16 \*\*\*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.04328 on 647 degrees of freedom  Multiple R-squared: 0.1051, Adjusted R-squared: 0.1037  F-statistic: 76 on 1 and 647 DF, p-value: < 2.2e-16   1. mult mod betw T and Xenantra   Call:  lm(formula = FrT ~ scale(GenerationLength\_d) + scale(Xen), data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -0.10871 -0.03217 -0.00595 0.03199 0.12849  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.193148 0.001662 116.218 < 2e-16 \*\*\*  scale(GenerationLength\_d) -0.011780 0.001665 -7.075 3.90e-12 \*\*\*  scale(Xen) -0.013354 0.001665 -8.020 4.97e-15 \*\*\*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.04234 on 646 degrees of freedom  Multiple R-squared: 0.1447, Adjusted R-squared: 0.1421  F-statistic: 54.66 on 2 and 646 DF, p-value: < 2.2e-16  Call:  lm(formula = FrT ~ scale(GenerationLength\_d) + scale(Xen) + scale(allcolddummy),  data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -0.131761 -0.030173 -0.004166 0.027650 0.120696  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.193148 0.001593 121.211 < 2e-16 \*\*\*  scale(GenerationLength\_d) -0.010427 0.001606 -6.491 1.70e-10 \*\*\*  scale(Xen) -0.014793 0.001608 -9.202 < 2e-16 \*\*\*  scale(allcolddummy) 0.012282 0.001617 7.596 1.07e-13 \*\*\*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.04059 on 645 degrees of freedom  Multiple R-squared: 0.215, Adjusted R-squared: 0.2113  F-statistic: 58.87 on 3 and 645 DF, p-value: < 2.2e-16   1. all mod with fraction of G   Call:  lm(formula = FrG ~ scale(GenerationLength\_d), data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -0.037807 -0.013082 -0.003767 0.010895 0.056697  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.0486843 0.0007496 64.947 <2e-16 \*\*\*  scale(GenerationLength\_d) 0.0008111 0.0007502 1.081 0.28  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.0191 on 647 degrees of freedom  Multiple R-squared: 0.001803, Adjusted R-squared: 0.0002607  F-statistic: 1.169 on 1 and 647 DF, p-value: 0.28  Call:  lm(formula = FrG ~ scale(GenerationLength\_d) + scale(Hib.unconfirmedHib),  data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -0.037549 -0.012992 -0.003651 0.010752 0.056938  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.0486843 0.0007491 64.993 <2e-16 \*\*\*  scale(GenerationLength\_d) 0.0008504 0.0007502 1.134 0.257  scale(Hib.unconfirmedHib) 0.0010408 0.0007502 1.387 0.166  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.01908 on 646 degrees of freedom  Multiple R-squared: 0.004769, Adjusted R-squared: 0.001688  F-statistic: 1.548 on 2 and 646 DF, p-value: 0.2135  Call:  lm(formula = FrG ~ scale(allcolddummy), data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -0.035660 -0.013327 -0.003855 0.010734 0.055819  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.0486843 0.0007480 65.086 <2e-16 \*\*\*  scale(allcolddummy) -0.0014891 0.0007486 -1.989 0.0471 \*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.01906 on 647 degrees of freedom  Multiple R-squared: 0.006079, Adjusted R-squared: 0.004543  F-statistic: 3.957 on 1 and 647 DF, p-value: 0.0471  Call:  lm(formula = FrG ~ scale(GenerationLength\_d) \* scale(allcolddummy),  data = allparameters)  Residuals:  Min 1Q Median 3Q Max  -0.039746 -0.012937 -0.004091 0.010478 0.055201  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 0.0491286 0.0007429 66.135 < 2e-16 \*\*\*  scale(GenerationLength\_d) 0.0011614 0.0007504 1.548 0.122  scale(allcolddummy) -0.0007401 0.0007563 -0.979 0.328  scale(GenerationLength\_d):scale(allcolddummy) 0.0038472 0.0008318 4.625 4.52e-06 \*\*\*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.01877 on 645 degrees of freedom  Multiple R-squared: 0.03908, Adjusted R-squared: 0.03461  F-statistic: 8.744 on 3 and 645 DF, p-value: 1.084e-05 |  |  |  |  |  |
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