> summary(manRes1, tol=0)

Error: Sampling.station

Df Pillai approx F num Df den Df Pr(>F)

Pond 6 8.9984 0.66690 54 -12

Instar 1 9.2518 0.87203 9 -7

Residuals 1

Error: Within

Df Pillai approx F num Df den Df Pr(>F)

Pond 7 4.3407 5.6222 63 217 < 2.2e-16 \*\*\*

Instar 2 1.7905 24.6884 18 52 < 2.2e-16 \*\*\*

Pond:Instar 11 4.8162 3.4534 99 297 < 2.2e-16 \*\*\*

Residuals 33

---

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

> anova(Depthmodel)

Missing cells for: PondIce:InstarPupae.

Interpret type III hypotheses with care.

Type III Analysis of Variance Table with Satterthwaite's method

Sum Sq Mean Sq NumDF DenDF F value Pr(>F)

Pond 443.97 63.424 7 15.116 4.0714 0.0105939 \*

Instar 362.90 181.449 2 29.269 11.6478 0.0001900 \*\*\*

Pond:Instar 1034.78 79.598 13 29.269 5.1097 0.0001228 \*\*\*

---

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

> anova(DOCmodel)

Type III Analysis of Variance Table with Satterthwaite's method

Sum Sq Mean Sq NumDF DenDF F value Pr(>F)

Pond 4294.3 613.46 7 16 58.241 3.372e-10 \*\*\*

Instar 2354.3 1177.14 2 32 111.756 3.663e-15 \*\*\*

Pond:Instar 3066.4 219.03 14 32 20.794 3.554e-12 \*\*\*

---

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

> anova(NH4model)

Type III Analysis of Variance Table with Satterthwaite's method

Sum Sq Mean Sq NumDF DenDF F value Pr(>F)

Pond 0.0109285 0.00156121 7 48 27.2715 1.109e-14 \*\*\*

Instar 0.0001612 0.00008061 2 48 1.4081 0.25452

Pond:Instar 0.0013670 0.00009764 14 48 1.7056 0.08581 .

---

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

> anova(TotalPmodel)

Type III Analysis of Variance Table with Satterthwaite's method

Sum Sq Mean Sq NumDF DenDF F value Pr(>F)

Pond 6.3992 0.91417 7 16 12.7094 1.8e-05 \*\*\*0.0000018

Instar 0.7990 0.39949 2 32 5.5540 0.0085010 \*\*

Pond:Instar 3.8260 0.27329 14 32 3.7994 0.0008697 \*\*\*

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

> anova(pHmodel)

Missing cells for: PondOil:Instar1st, PondOil:Instar2nd3rd.

Interpret type III hypotheses with care.

Type III Analysis of Variance Table with Satterthwaite's method

Sum Sq Mean Sq NumDF DenDF F value Pr(>F)

Pond 1.0939 0.15627 7 16.817 6.1397 0.001116 \*\*

Instar 2.0207 1.01035 2 29.701 39.6967 4.065e-09 \*\*\*

Pond:Instar 1.6147 0.13456 12 29.701 5.2868 0.000108 \*\*\*

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

> anova(conductmodel)

Type III Analysis of Variance Table with Satterthwaite's method

Sum Sq Mean Sq NumDF DenDF F value Pr(>F)

Pond 5.7684 0.82405 7 15.915 115.357 1.937e-12 \*\*\*

Instar 2.1721 1.08606 2 31.437 152.034 < 2.2e-16 \*\*\*

Pond:Instar 1.0262 0.07330 14 31.341 10.261 4.410e-08 \*\*\*

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

> anova(Domodel)

Type III Analysis of Variance Table with Satterthwaite's method

Sum Sq Mean Sq NumDF DenDF F value Pr(>F)

Pond 2205.5 315.08 7 16 6.4053 0.001047 \*\*

Instar 2363.8 1181.90 2 32 24.0276 4.248e-07 \*\*\*

Pond:Instar 3754.5 268.18 14 32 5.4519 3.582e-05 \*\*\*

---

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

> anova(FPOMmodel)

Type III Analysis of Variance Table with Satterthwaite's method

Sum Sq Mean Sq NumDF DenDF F value Pr(>F)

Pond 26.4626 3.7804 7 16 3.6365 0.01539 \*

Instar 5.5886 2.7943 2 32 2.6880 0.08335 .

Pond:Instar 24.1509 1.7251 14 32 1.6594 0.11582

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