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| **Function** | **Category** | **Description** |  |
| *mod\_results* | Table | *mod\_results* takes multi-level meta-analytic and meta-regression models (with multiple moderators – continuous or categorical) of class rma.mv/rma/robust.rma and calculates mean or marginalised mean meta-analytic estimates across all levels of a given moderator or overall (i.e., intercept only). The *mod\_results* table can then be used with *orchard\_plot,* *bubble\_plot* or *catepillars* to plot results graphically. If a multivariate meta-regression model (many moderators) is provided users can specify the 'by' and/or 'at' arguments to marginalise over desired levels of other moderators. | |
| *submerge* | Table | submerge allows users to merge multiple *mod\_results* tables together into one. | |
| *orchard\_plot* | Figure | Modified forest plot that plots the meta-analytic means, confidence intervals, prediction intervals and raw data for each level of a categorical moderator. Users have a number of arguments for modifying the look of plots including the legend, colour schemes, size and weight of points and lines and angle and naming of text in axes. Sub-setting abilities are provided for users if they only want to plot a subset of the levels for a given moderator. Additional modifications can be made by adding and modifying layers of the ggplot object. Plots can be made using either mod\_results objects directly or using the rma.mv/rma/robust.rma model object in combination with the raw data. If a multivariate meta-regression model (many moderators) is provided directly users can specify the 'by' and/or 'at' arguments to marginalise over desired levels of other moderators. | |
| *bubble\_plot* | Figure | Creates a bubble plot(s) depicting the predicted mean effect size, confidence and prediction interval as a function of a continuous moderator (slope estimate) or a series of separate plots showing predictions across an additional moderator (i.e., interaction plots). Plots can be made using either *mod\_results* objects directly or using the rma.mv/rma/robust.rma model object in combination with the raw data. Raw data is plotted and point size is adjusted according to effect size precision. | |
| *catepillars* | Figure | Creates a caterpillar plot from mean effect size estimates for all levels of a given categorical moderator, their corresponding confidence intervals and prediction intervals. Plots can be made using either mod\_results objects directly or using the rma.mv/rma/robust.rma model object in combination with the raw data. | |
| *i2\_ml* | Statistics | Calculates heterogeneity statistics using measures of I2 for a multilevel meta-analytic or meta-regression models. Point estimates can be calculated quicky for each level of random effect along with an estimate of total heterogeneity. Users also have the option of generating 95% confidence intervals for all I2 estimates using the `boot` argument. This arguments will conduct parametric bootstrapping. | |
| *r2\_ml* | Statistics | Calculates marginal and conditional R2 for a multilevel meta-analytic or meta-regression models. Point estimates can be calculated quicky using a couple of different methods, but users also have the option of generating 95% confidence intervals for R2 using the `boot` argument. This arguments will conduct parametric bootstrapping. | |
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**Table 1** – Main functions in the orchard package, their general categorisation and a description of what they can be used for in combination with *metafor* meta-analytic model objects (rma.mv, rma and robust.rma).