RESEARCH INSTITUTE
NATURE AND FOREST

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effectclass
an R package to interpret effects and visualise uncertainty

~~eRum 2020, Milan, Italy~~

e-Rum 2020, in the cloud

ir. Thierry Onkelinx

Research Institute for Nature and Forest (INBO), Brussels, Belgium

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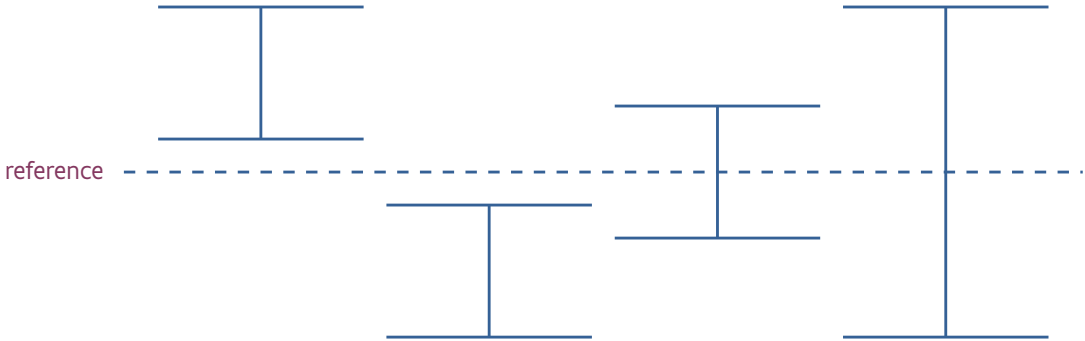
VIRTUAL CONFERENCE
17/20 JUNE
MILANO

Significant effect = reference is outside confidence interval



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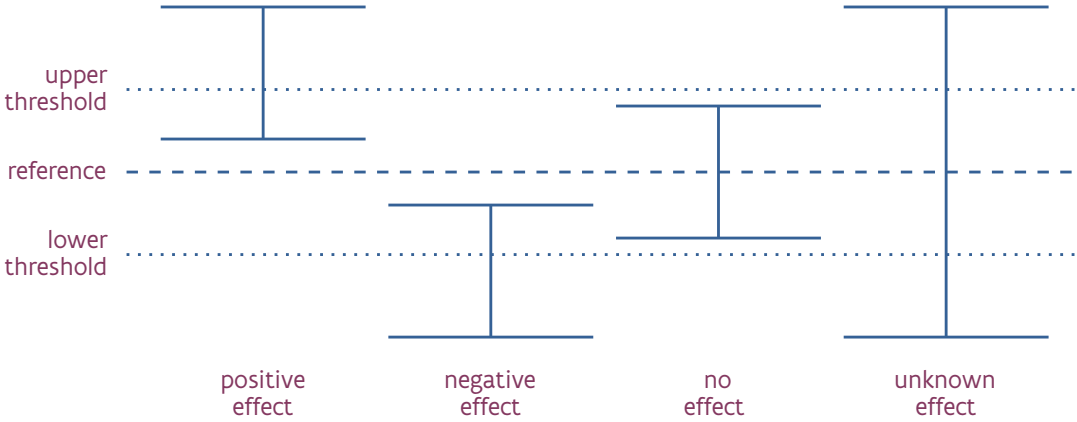
Use extra thresholds to interpret confidence intervals



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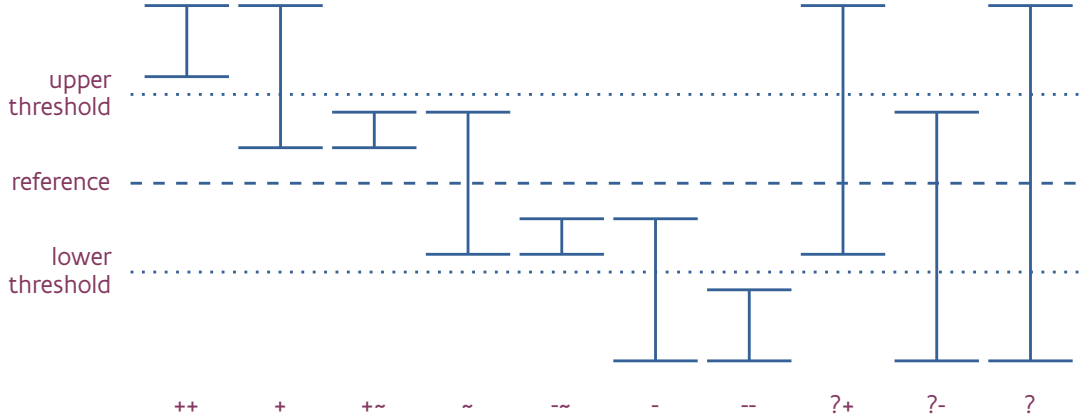
Reference and thresholds define 10 classes



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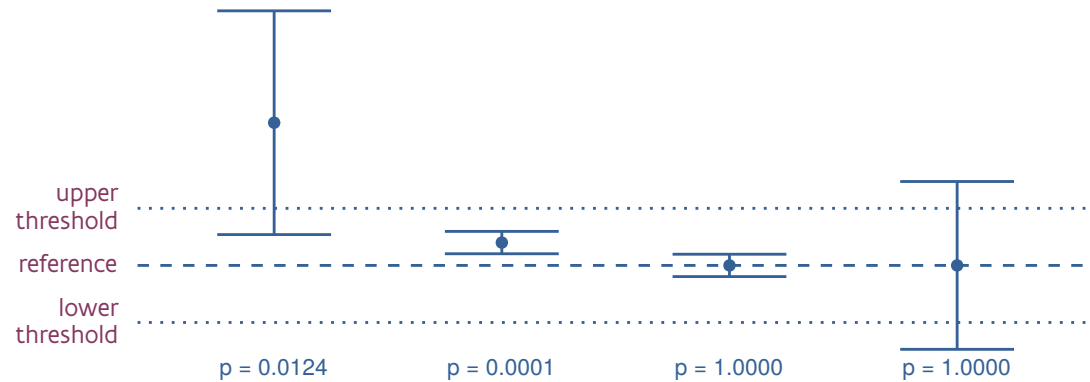
Confidence intervals are more informative than point estimates and p-values



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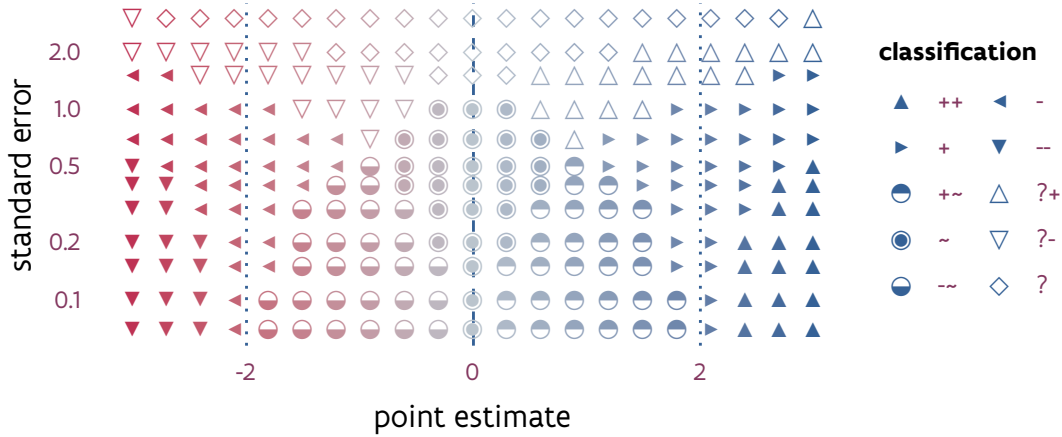
Code example

```
ds <- data.frame(
  lcl = c(-5, -5, -5, -5, -2, -2, -2, 1, 1, 4),
  ucl = c( 5,  2, -1, -4,  5,  2, -1, 5, 2, 5)
)
library(effectclass)
ds$effect <- classification(lcl = ds$lcl, ucl = ds$ucl, threshold = 3)
ds$coarse <- coarse_classification(ds$effect)
ds$unsigned <- remove_sign(ds$effect)
```

```
## Rows: 10
## Columns: 5
## $ lcl      <dbl> 4, 1, 1, -2, -2, -5, -5, -2, -5, -5
## $ ucl      <dbl> 5, 5, 2, 2, -1, -1, -4, 5, 2, 5
## $ effect   <fct> ++, +, +~, ~, -~, -, --, ?+, ?-, ?
## $ coarse   <fct> +, +, +, ~, -, -, -, ?, ?, ?
## $ unsigned <fct> **, *, *~, ~, *~, *, **, ?*, ?*, ?
```

ggplot2 add-ons: stat_effect() + scale_effect()



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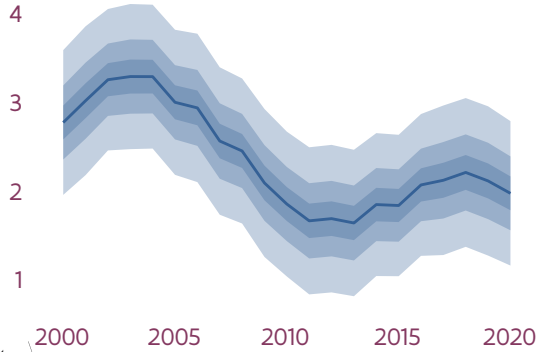
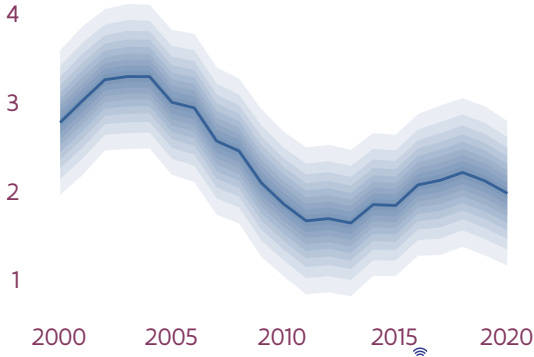
`stat_fan()` + `geom_line()`

Britton et al. (1998)

fine = FALSE (default)



fine = TRUE



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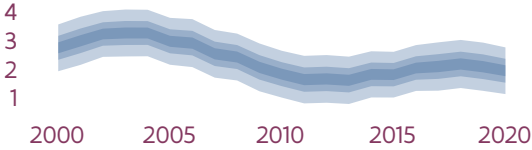
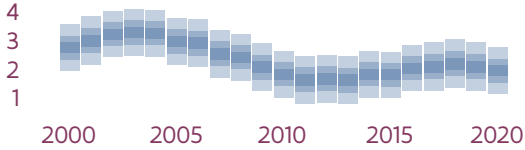
stat_fan() supports different geoms

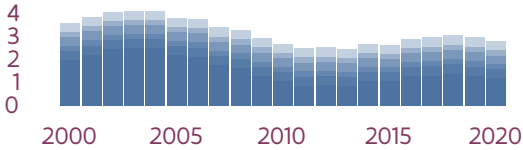
ribbon (default)



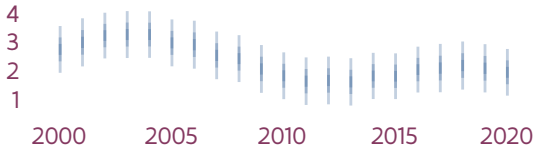
rect



bar



linerange



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Where to find `effectclass`

Links are available in the abstract at https://2020.erum.io/

Vignettes and documentation

https://effectclass.netlify.app

Source code

https://github.com/inbo/effectclass

```
remotes::install_github("inbo/effectclass")
```

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Referenties I

Britton, E., Fisher, P. & Whitley, J. (1998). The inflation report projections: understanding the fan chart. Bank of England Quarterly Bulletin (2): 30–37. https://www.bankofengland.co.uk/-/media/boe/files/quarterly-bulletin/1998/the-inflation-report-projections-understanding-the-fan-char