Model comparison

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Trees dataset

```
trees <- read.csv("data/trees.csv")
head(trees)
```

```
  site   dbh height    sex dead
1    4 29.68   36.1   male    0
2    5 33.29   42.3   male    0
3    2 28.03   41.9 female    0
4    5 39.86   46.5 female    0
5    1 47.94   43.9 female    0
6    1 10.82   26.2   male    0
```

Four models

```
m1 <- lm(height ~ dbh, data = trees)
```

```
m2 <- lm(height ~ sex, data = trees)
```

```
m3 <- lm(height ~ site, data = trees)
```

```
m4 <- lm(height ~ site*dbh, data = trees)
```

Compare model performance

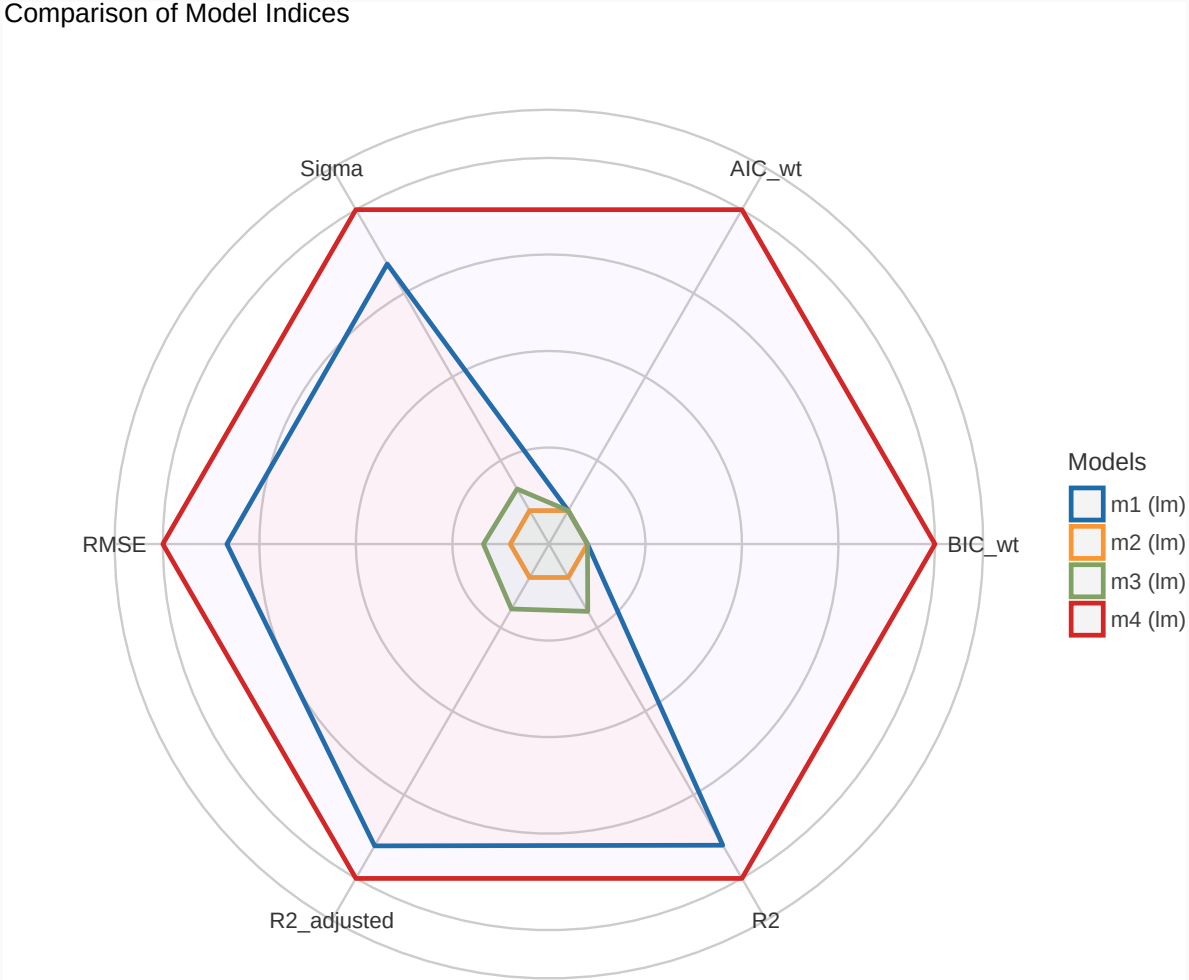
```
library("performance")
compare_performance(m1, m2, m3, m4)
```

```
# Comparison of Model Performance Indices

Name | Model |      AIC | AIC weights |      BIC | BIC weights |    R2 | R2 (adj.)
-----------------------------------------------------------------------------------
m1   |    lm | 5660.250 |   8.39e-126 | 5674.973 |   1.28e-106 | 0.787 |     0.787
m2   |    lm | 7206.145 |    0.00e+00 | 7220.868 |    0.00e+00 | 0.002 |     0.001
m3   |    lm | 7117.264 |    0.00e+00 | 7171.250 |    0.00e+00 | 0.102 |     0.093
m4   |    lm | 5084.253 |        1.00 | 5187.316 |        1.00 | 0.885 |     0.882
```

Compare model performance

```
library("see")
plot(compare_performance(m1, m2, m3, m4))
```



Compare parameters

```
library("parameters")
compare_parameters(m1, m2, m3, m4)
```

Parameter	m1	m2	m3	m4
(Intercept)	19.34 (18.73, 19.95)	36.93 (36.15, 37.71)	33.84 (33.00, 34.68)	16.36 (15.65, 17.07)
dbh	0.62 (0.60, 0.64)			0.63 (0.61, 0.65)
sex (male)		-0.84 (-1.94, 0.26)		
site (5)			4.37 (2.52, 6.22)	3.92 (2.21, 5.63)
site (2)			6.34 (4.94, 7.74)	7.68 (6.49, 8.88)
site (3)			5.00 (3.07, 6.93)	4.52 (2.82, 6.22)
site (4)			0.53 (-1.40, 2.47)	2.77 (1.17, 4.37)
site (9)			9.17 (3.25, 15.09)	2.62 (-7.34, 12.58)
site (6)			4.76 (2.46, 7.06)	4.16 (2.17, 6.14)
site (7)			-0.74 (-4.37, 2.89)	-2.31 (-5.35, 0.74)
site (8)			-0.68 (-5.54, 4.17)	-2.62 (-10.64, 5.41)
site (10)			-0.58 (-8.04, 6.88)	4.66 (-1.21, 10.53)
site (3) * dbh				-6.03e-03 (-0.06, 0.05)
site (4) * dbh				-0.03 (-0.09, 0.02)
site (5) * dbh				-0.01 (-0.06, 0.04)
site (2) * dbh				-0.04 (-0.08, 0.00)
site (7) * dbh				0.08 (-0.02, 0.18)
site (8) * dbh				-0.08 (-0.30, 0.14)
site (9) * dbh				0.08 (-0.21, 0.37)
site (6) * dbh				1.34e-03 (-0.06, 0.06)
site (10) * dbh				-0.10 (-0.33, 0.12)
Observations	1000	1000	1000	1000

Compare parameters

```
library("parameters")
plot(compare_parameters(m1, m2, m3, m4))
```