Model call record

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Calculates emission factors

Check package version.

```
packageVersion('ALFAM2')
```

```
## [1] '1.5.5'
```

Parameter values.

```
ALFAM2pars02
```

```
##             int.f0     app.mthd.os.f0    app.rate.ni.f0         man.dm.f0
##         -0.60568338       -1.74351499       -0.01114900        0.39967070
## man.source.pig.f0     app.mthd.cs.f0            int.r1    app.mthd.bc.r1
##         -0.59202858       -7.63373787       -0.93921516        0.79352480
##         man.dm.r1         air.temp.r1         wind.2m.r1    app.mthd.ts.r1
##         -0.13988189        0.07354268        0.15026720       -0.45907135
## ts.cereal.hght.r1           man.ph.r1            int.r2      rain.rate.r2
##         -0.24471238        0.66500000       -1.79918546        0.39402156
##            int.r3     app.mthd.bc.r3     app.mthd.cs.r3          man.ph.r3
##         -3.22841225        0.56153956       -0.66647417        0.23800000
## incorp.shallow.f4 incorp.shallow.r3      incorp.deep.f4     incorp.deep.r3
##         -0.96496655       -0.58052689       -3.69494954       -1.26569562
```

```
dat
```

```
##     app.timing air.temp  wind.2m  rain.rate   man.source fraction man.dm
## 1        Marts  4.431012 4.058916 0.05996290   Svinegylle      raw   3.90
## 2        April  8.236460 3.844456 0.05521194   Svinegylle      raw   3.90
## 3          Maj 12.449250 3.483915 0.07029935   Svinegylle      raw   3.90
```

```
## 4        Sommer 16.876226 3.156240 0.10592531         Svinegylle     raw   3.90
## 5        Efterår 14.497748 3.322770 0.12826017         Svinegylle     raw   3.90
## 1.1        Marts  4.431012 4.058916 0.05996290         Kvæggylle     raw   6.50
## 2.1        April  8.236460 3.844456 0.05521194         Kvæggylle     raw   6.50
## 3.1          Maj 12.449250 3.483915 0.07029935         Kvæggylle     raw   6.50
## 4.1       Sommer 16.876226 3.156240 0.10592531         Kvæggylle     raw   6.50
## 5.1       Efterår 14.497748 3.322770 0.12826017         Kvæggylle     raw   6.50
## 1.2        Marts  4.431012 4.058916 0.05996290 Afgasset biomasse     raw   5.90
## 2.2        April  8.236460 3.844456 0.05521194 Afgasset biomasse     raw   5.90
## 3.2          Maj 12.449250 3.483915 0.07029935 Afgasset biomasse     raw   5.90
## 4.2       Sommer 16.876226 3.156240 0.10592531 Afgasset biomasse     raw   5.90
## 5.2       Efterår 14.497748 3.322770 0.12826017 Afgasset biomasse     raw   5.90
## 1.3        Marts  4.431012 4.058916 0.05996290         Svinegylle  liquid   1.95
## 2.3        April  8.236460 3.844456 0.05521194         Svinegylle  liquid   1.95
## 3.3          Maj 12.449250 3.483915 0.07029935         Svinegylle  liquid   1.95
## 4.3       Sommer 16.876226 3.156240 0.10592531         Svinegylle  liquid   1.95
## 5.3       Efterår 14.497748 3.322770 0.12826017         Svinegylle  liquid   1.95
## 1.4        Marts  4.431012 4.058916 0.05996290         Kvæggylle  liquid   3.25
## 2.4        April  8.236460 3.844456 0.05521194         Kvæggylle  liquid   3.25
## 3.4          Maj 12.449250 3.483915 0.07029935         Kvæggylle  liquid   3.25
## 4.4       Sommer 16.876226 3.156240 0.10592531         Kvæggylle  liquid   3.25
## 5.4       Efterår 14.497748 3.322770 0.12826017         Kvæggylle  liquid   3.25
## 1.5        Marts  4.431012 4.058916 0.05996290 Afgasset biomasse  liquid   2.95
## 2.5        April  8.236460 3.844456 0.05521194 Afgasset biomasse  liquid   2.95
## 3.5          Maj 12.449250 3.483915 0.07029935 Afgasset biomasse  liquid   2.95
## 4.5       Sommer 16.876226 3.156240 0.10592531 Afgasset biomasse  liquid   2.95
## 5.5       Efterår 14.497748 3.322770 0.12826017 Afgasset biomasse  liquid   2.95
## 1.6        Marts  4.431012 4.058916 0.05996290         Svinegylle   solid  15.00
## 2.6        April  8.236460 3.844456 0.05521194         Svinegylle   solid  15.00
## 3.6          Maj 12.449250 3.483915 0.07029935         Svinegylle   solid  15.00
## 4.6       Sommer 16.876226 3.156240 0.10592531         Svinegylle   solid  15.00
## 5.6       Efterår 14.497748 3.322770 0.12826017         Svinegylle   solid  15.00
## 1.7        Marts  4.431012 4.058916 0.05996290         Kvæggylle   solid  15.00
## 2.7        April  8.236460 3.844456 0.05521194         Kvæggylle   solid  15.00
## 3.7          Maj 12.449250 3.483915 0.07029935         Kvæggylle   solid  15.00
## 4.7       Sommer 16.876226 3.156240 0.10592531         Kvæggylle   solid  15.00
## 5.7       Efterår 14.497748 3.322770 0.12826017         Kvæggylle   solid  15.00
## 1.8        Marts  4.431012 4.058916 0.05996290 Afgasset biomasse   solid  15.00
## 2.8        April  8.236460 3.844456 0.05521194 Afgasset biomasse   solid  15.00
```

```
## 3.8        Maj 12.449250 3.483915 0.07029935 Afgasset biomasse   solid  15.00
## 4.8     Sommer 16.876226 3.156240 0.10592531 Afgasset biomasse   solid  15.00
## 5.8     Efterår 14.497748 3.322770 0.12826017 Afgasset biomasse   solid  15.00
## 1.9      Marts  4.431012 4.058916 0.05996290       Svinegylle   solid  15.00
## 2.9      April  8.236460 3.844456 0.05521194       Svinegylle   solid  15.00
## 3.9        Maj 12.449250 3.483915 0.07029935       Svinegylle   solid  15.00
## 4.9     Sommer 16.876226 3.156240 0.10592531       Svinegylle   solid  15.00
## 5.9     Efterår 14.497748 3.322770 0.12826017       Svinegylle   solid  15.00
## 1.10     Marts  4.431012 4.058916 0.05996290       Kvæggylle   solid  15.00
## 2.10     April  8.236460 3.844456 0.05521194       Kvæggylle   solid  15.00
## 3.10       Maj 12.449250 3.483915 0.07029935       Kvæggylle   solid  15.00
## 4.10    Sommer 16.876226 3.156240 0.10592531       Kvæggylle   solid  15.00
## 5.10    Efterår 14.497748 3.322770 0.12826017       Kvæggylle   solid  15.00
## 1.11     Marts  4.431012 4.058916 0.05996290 Afgasset biomasse   solid  15.00
## 2.11     April  8.236460 3.844456 0.05521194 Afgasset biomasse   solid  15.00
## 3.11       Maj 12.449250 3.483915 0.07029935 Afgasset biomasse   solid  15.00
## 4.11    Sommer 16.876226 3.156240 0.10592531 Afgasset biomasse   solid  15.00
## 5.11    Efterår 14.497748 3.322770 0.12826017 Afgasset biomasse   solid  15.00
##      man.ph incorp      app.mthd t.incorp app.rate.ni  ct tan.app id
## 1       7.2   none Trailing hose       NA          30 168     100  1
## 2       7.2   none Trailing hose       NA          30 168     100  2
## 3       7.2   none Trailing hose       NA          30 168     100  3
## 4       7.2   none Trailing hose       NA          30 168     100  4
## 5       7.2   none Trailing hose       NA          30 168     100  5
## 1.1     7.0   none Trailing hose       NA          30 168     100  6
## 2.1     7.0   none Trailing hose       NA          30 168     100  7
## 3.1     7.0   none Trailing hose       NA          30 168     100  8
## 4.1     7.0   none Trailing hose       NA          30 168     100  9
## 5.1     7.0   none Trailing hose       NA          30 168     100 10
## 1.2     7.9   none Trailing hose       NA          30 168     100 11
## 2.2     7.9   none Trailing hose       NA          30 168     100 12
## 3.2     7.9   none Trailing hose       NA          30 168     100 13
## 4.2     7.9   none Trailing hose       NA          30 168     100 14
## 5.2     7.9   none Trailing hose       NA          30 168     100 15
## 1.3     7.2   none Trailing hose       NA          30 168     100 16
## 2.3     7.2   none Trailing hose       NA          30 168     100 17
## 3.3     7.2   none Trailing hose       NA          30 168     100 18
## 4.3     7.2   none Trailing hose       NA          30 168     100 19
## 5.3     7.2   none Trailing hose       NA          30 168     100 20
```

```
## 1.4    7.0    none Trailing hose      NA          30 168      100 21
## 2.4    7.0    none Trailing hose      NA          30 168      100 22
## 3.4    7.0    none Trailing hose      NA          30 168      100 23
## 4.4    7.0    none Trailing hose      NA          30 168      100 24
## 5.4    7.0    none Trailing hose      NA          30 168      100 25
## 1.5    7.9    none Trailing hose      NA          30 168      100 26
## 2.5    7.9    none Trailing hose      NA          30 168      100 27
## 3.5    7.9    none Trailing hose      NA          30 168      100 28
## 4.5    7.9    none Trailing hose      NA          30 168      100 29
## 5.5    7.9    none Trailing hose      NA          30 168      100 30
## 1.6    7.2    deep     Broadcast      4           30 168      100 31
## 2.6    7.2    deep     Broadcast      4           30 168      100 32
## 3.6    7.2    deep     Broadcast      4           30 168      100 33
## 4.6    7.2    deep     Broadcast      4           30 168      100 34
## 5.6    7.2    deep     Broadcast      4           30 168      100 35
## 1.7    7.0    deep     Broadcast      4           30 168      100 36
## 2.7    7.0    deep     Broadcast      4           30 168      100 37
## 3.7    7.0    deep     Broadcast      4           30 168      100 38
## 4.7    7.0    deep     Broadcast      4           30 168      100 39
## 5.7    7.0    deep     Broadcast      4           30 168      100 40
## 1.8    7.9    deep     Broadcast      4           30 168      100 41
## 2.8    7.9    deep     Broadcast      4           30 168      100 42
## 3.8    7.9    deep     Broadcast      4           30 168      100 43
## 4.8    7.9    deep     Broadcast      4           30 168      100 44
## 5.8    7.9    deep     Broadcast      4           30 168      100 45
## 1.9    7.2    none     Broadcast      NA          30 168      100 46
## 2.9    7.2    none     Broadcast      NA          30 168      100 47
## 3.9    7.2    none     Broadcast      NA          30 168      100 48
## 4.9    7.2    none     Broadcast      NA          30 168      100 49
## 5.9    7.2    none     Broadcast      NA          30 168      100 50
## 1.10   7.0    none     Broadcast      NA          30 168      100 51
## 2.10   7.0    none     Broadcast      NA          30 168      100 52
## 3.10   7.0    none     Broadcast      NA          30 168      100 53
## 4.10   7.0    none     Broadcast      NA          30 168      100 54
## 5.10   7.0    none     Broadcast      NA          30 168      100 55
## 1.11   7.9    none     Broadcast      NA          30 168      100 56
## 2.11   7.9    none     Broadcast      NA          30 168      100 57
## 3.11   7.9    none     Broadcast      NA          30 168      100 58
## 4.11   7.9    none     Broadcast      NA          30 168      100 59
```

```
## 5.11    7.9   none    Broadcast       NA          30 168     100 60
```

Run model

With set 2 parameters

```r
preds <- ALFAM2mod(dat, pars = ALFAM2pars02, app.name = 'tan.app', time.name = 'ct',
                   time.incorp = 't.incorp', group = 'id', warn = TRUE, prep = TRUE)
```

```
## User-supplied parameters are being used.
```

```
## Incorporation applied (for group 31).
```

```
## Incorporation applied (for group 32).
```

```
## Incorporation applied (for group 33).
```

```
## Incorporation applied (for group 34).
```

```
## Incorporation applied (for group 35).
```

```
## Incorporation applied (for group 36).
```

```
## Incorporation applied (for group 37).
```

```
## Incorporation applied (for group 38).
```

```
## Incorporation applied (for group 39).
```

```
## Incorporation applied (for group 40).
```

```
## Incorporation applied (for group 41).
```

```
## Incorporation applied (for group 42).
```

```
## Incorporation applied (for group 43).
```

```
## Incorporation applied (for group 44).
```

```
## Incorporation applied (for group 45).
```

```
## Warning in ALFAM2mod(dat, pars = ALFAM2pars02, app.name = "tan.app", time.name = "ct", : Running with 17 parameters. Dropped 7 with no
## These secondary parameters have been dropped:
##    app.mthd.os.f0
##    app.mthd.cs.f0
##    app.mthd.ts.r1
##    ts.cereal.hght.r1
##    app.mthd.cs.r3
##    incorp.shallow.f4
```

```
##    incorp.shallow.r3
## 
## These secondary parameters are being used:
##    int.f0
##    app.rate.ni.f0
##    man.dm.f0
##    man.source.pig.f0
##    int.r1
##    app.mthd.bc.r1
##    man.dm.r1
##    air.temp.r1
##    wind.2m.r1
##    man.ph.r1
##    int.r2
##    rain.rate.r2
##    int.r3
##    app.mthd.bc.r3
##    man.ph.r3
##    incorp.deep.f4
##    incorp.deep.r3
```

Add results to main df

```r
dat$EF <- signif(preds$er, 2)
dat$EFp <- 100 * signif(preds$er, 2)
```