Model call record

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Calculates emission factors

Check package version.

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

```
## [1] '3.7'
```

Parameter values.

```
ALFAM2pars02
```

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

```
dat
```

```
##       app.timing  air.temp  wind.2m  rain.rate   scenario        man.source fraction red.dm man.dm man.ph incorp      app.mthd t.incorp
## 1         Marts  4.431012  4.058916 0.05996290  reference        Svinegylle      raw      0   3.90    7.2   none  Trailing hose       NA
```

```
## 2      April  8.236460 3.844456 0.05521194 reference        Svinegylle    raw   0   3.90   7.2   none Trailing hose   NA
## 3        Maj 12.449250 3.483915 0.07029935 reference        Svinegylle    raw   0   3.90   7.2   none Trailing hose   NA
## 4     Sommer 16.876226 3.156240 0.10592531 reference        Svinegylle    raw   0   3.90   7.2   none Trailing hose   NA
## 5     Efterår 14.497748 3.322770 0.12826017 reference        Svinegylle    raw   0   3.90   7.2   none Trailing hose   NA
## 1.1    Marts  4.431012 4.058916 0.05996290 reference         Kvæggylle    raw   0   6.50   7.0   none Trailing hose   NA
## 2.1    April  8.236460 3.844456 0.05521194 reference         Kvæggylle    raw   0   6.50   7.0   none Trailing hose   NA
## 3.1      Maj 12.449250 3.483915 0.07029935 reference         Kvæggylle    raw   0   6.50   7.0   none Trailing hose   NA
## 4.1   Sommer 16.876226 3.156240 0.10592531 reference         Kvæggylle    raw   0   6.50   7.0   none Trailing hose   NA
## 5.1   Efterår 14.497748 3.322770 0.12826017 reference         Kvæggylle    raw   0   6.50   7.0   none Trailing hose   NA
## 1.2    Marts  4.431012 4.058916 0.05996290 reference Afgasset biomasse    raw   0   5.90   7.9   none Trailing hose   NA
## 2.2    April  8.236460 3.844456 0.05521194 reference Afgasset biomasse    raw   0   5.90   7.9   none Trailing hose   NA
## 3.2      Maj 12.449250 3.483915 0.07029935 reference Afgasset biomasse    raw   0   5.90   7.9   none Trailing hose   NA
## 4.2   Sommer 16.876226 3.156240 0.10592531 reference Afgasset biomasse    raw   0   5.90   7.9   none Trailing hose   NA
## 5.2   Efterår 14.497748 3.322770 0.12826017 reference Afgasset biomasse    raw   0   5.90   7.9   none Trailing hose   NA
## 1.3    Marts  4.431012 4.058916 0.05996290       low        Svinegylle liquid 0.6   1.56   7.4   none Trailing hose   NA
## 2.3    April  8.236460 3.844456 0.05521194       low        Svinegylle liquid 0.6   1.56   7.4   none Trailing hose   NA
## 3.3      Maj 12.449250 3.483915 0.07029935       low        Svinegylle liquid 0.6   1.56   7.4   none Trailing hose   NA
## 4.3   Sommer 16.876226 3.156240 0.10592531       low        Svinegylle liquid 0.6   1.56   7.4   none Trailing hose   NA
## 5.3   Efterår 14.497748 3.322770 0.12826017       low        Svinegylle liquid 0.6   1.56   7.4   none Trailing hose   NA
## 1.4    Marts  4.431012 4.058916 0.05996290       low         Kvæggylle liquid 0.6   2.60   7.2   none Trailing hose   NA
## 2.4    April  8.236460 3.844456 0.05521194       low         Kvæggylle liquid 0.6   2.60   7.2   none Trailing hose   NA
## 3.4      Maj 12.449250 3.483915 0.07029935       low         Kvæggylle liquid 0.6   2.60   7.2   none Trailing hose   NA
## 4.4   Sommer 16.876226 3.156240 0.10592531       low         Kvæggylle liquid 0.6   2.60   7.2   none Trailing hose   NA
## 5.4   Efterår 14.497748 3.322770 0.12826017       low         Kvæggylle liquid 0.6   2.60   7.2   none Trailing hose   NA
## 1.5    Marts  4.431012 4.058916 0.05996290       low Afgasset biomasse liquid 0.6   2.36   8.1   none Trailing hose   NA
## 2.5    April  8.236460 3.844456 0.05521194       low Afgasset biomasse liquid 0.6   2.36   8.1   none Trailing hose   NA
## 3.5      Maj 12.449250 3.483915 0.07029935       low Afgasset biomasse liquid 0.6   2.36   8.1   none Trailing hose   NA
## 4.5   Sommer 16.876226 3.156240 0.10592531       low Afgasset biomasse liquid 0.6   2.36   8.1   none Trailing hose   NA
## 5.5   Efterår 14.497748 3.322770 0.12826017       low Afgasset biomasse liquid 0.6   2.36   8.1   none Trailing hose   NA
## 1.6    Marts  4.431012 4.058916 0.05996290       mid        Svinegylle liquid 0.4   2.34   7.4   none Trailing hose   NA
## 2.6    April  8.236460 3.844456 0.05521194       mid        Svinegylle liquid 0.4   2.34   7.4   none Trailing hose   NA
## 3.6      Maj 12.449250 3.483915 0.07029935       mid        Svinegylle liquid 0.4   2.34   7.4   none Trailing hose   NA
## 4.6   Sommer 16.876226 3.156240 0.10592531       mid        Svinegylle liquid 0.4   2.34   7.4   none Trailing hose   NA
## 5.6   Efterår 14.497748 3.322770 0.12826017       mid        Svinegylle liquid 0.4   2.34   7.4   none Trailing hose   NA
## 1.7    Marts  4.431012 4.058916 0.05996290       mid         Kvæggylle liquid 0.4   3.90   7.2   none Trailing hose   NA
## 2.7    April  8.236460 3.844456 0.05521194       mid         Kvæggylle liquid 0.4   3.90   7.2   none Trailing hose   NA
## 3.7      Maj 12.449250 3.483915 0.07029935       mid         Kvæggylle liquid 0.4   3.90   7.2   none Trailing hose   NA
## 4.7   Sommer 16.876226 3.156240 0.10592531       mid         Kvæggylle liquid 0.4   3.90   7.2   none Trailing hose   NA
## 5.7   Efterår 14.497748 3.322770 0.12826017       mid         Kvæggylle liquid 0.4   3.90   7.2   none Trailing hose   NA
```

```
## 1.8     Marts  4.431012 4.058916 0.05996290    mid Afgasset biomasse liquid 0.4 3.54 8.1 none Trailing hose   NA
## 2.8     April  8.236460 3.844456 0.05521194    mid Afgasset biomasse liquid 0.4 3.54 8.1 none Trailing hose   NA
## 3.8       Maj 12.449250 3.483915 0.07029935    mid Afgasset biomasse liquid 0.4 3.54 8.1 none Trailing hose   NA
## 4.8    Sommer 16.876226 3.156240 0.10592531    mid Afgasset biomasse liquid 0.4 3.54 8.1 none Trailing hose   NA
## 5.8    Efterår 14.497748 3.322770 0.12826017   mid Afgasset biomasse liquid 0.4 3.54 8.1 none Trailing hose   NA
## 1.9     Marts  4.431012 4.058916 0.05996290   high       Svinegylle liquid 0.2 3.12 7.4 none Trailing hose   NA
## 2.9     April  8.236460 3.844456 0.05521194   high       Svinegylle liquid 0.2 3.12 7.4 none Trailing hose   NA
## 3.9       Maj 12.449250 3.483915 0.07029935   high       Svinegylle liquid 0.2 3.12 7.4 none Trailing hose   NA
## 4.9    Sommer 16.876226 3.156240 0.10592531   high       Svinegylle liquid 0.2 3.12 7.4 none Trailing hose   NA
## 5.9    Efterår 14.497748 3.322770 0.12826017  high       Svinegylle liquid 0.2 3.12 7.4 none Trailing hose   NA
## 1.10    Marts  4.431012 4.058916 0.05996290   high       Kvæggylle liquid 0.2 5.20 7.2 none Trailing hose   NA
## 2.10    April  8.236460 3.844456 0.05521194   high       Kvæggylle liquid 0.2 5.20 7.2 none Trailing hose   NA
## 3.10      Maj 12.449250 3.483915 0.07029935   high       Kvæggylle liquid 0.2 5.20 7.2 none Trailing hose   NA
## 4.10   Sommer 16.876226 3.156240 0.10592531   high       Kvæggylle liquid 0.2 5.20 7.2 none Trailing hose   NA
## 5.10   Efterår 14.497748 3.322770 0.12826017  high       Kvæggylle liquid 0.2 5.20 7.2 none Trailing hose   NA
## 1.11    Marts  4.431012 4.058916 0.05996290   high Afgasset biomasse liquid 0.2 4.72 8.1 none Trailing hose   NA
## 2.11    April  8.236460 3.844456 0.05521194   high Afgasset biomasse liquid 0.2 4.72 8.1 none Trailing hose   NA
## 3.11      Maj 12.449250 3.483915 0.07029935   high Afgasset biomasse liquid 0.2 4.72 8.1 none Trailing hose   NA
##      app.rate.ni  ct tan.app id
## 1             30 168     100  1
## 2             30 168     100  2
## 3             30 168     100  3
## 4             30 168     100  4
## 5             30 168     100  5
## 1.1           30 168     100  6
## 2.1           30 168     100  7
## 3.1           30 168     100  8
## 4.1           30 168     100  9
## 5.1           30 168     100 10
## 1.2           30 168     100 11
## 2.2           30 168     100 12
## 3.2           30 168     100 13
## 4.2           30 168     100 14
## 5.2           30 168     100 15
## 1.3           30 168     100 16
## 2.3           30 168     100 17
## 3.3           30 168     100 18
## 4.3           30 168     100 19
## 5.3           30 168     100 20
```

```
## 1.4            30 168     100 21
## 2.4            30 168     100 22
## 3.4            30 168     100 23
## 4.4            30 168     100 24
## 5.4            30 168     100 25
## 1.5            30 168     100 26
## 2.5            30 168     100 27
## 3.5            30 168     100 28
## 4.5            30 168     100 29
## 5.5            30 168     100 30
## 1.6            30 168     100 31
## 2.6            30 168     100 32
## 3.6            30 168     100 33
## 4.6            30 168     100 34
## 5.6            30 168     100 35
## 1.7            30 168     100 36
## 2.7            30 168     100 37
## 3.7            30 168     100 38
## 4.7            30 168     100 39
## 5.7            30 168     100 40
## 1.8            30 168     100 41
## 2.8            30 168     100 42
## 3.8            30 168     100 43
## 4.8            30 168     100 44
## 5.8            30 168     100 45
## 1.9            30 168     100 46
## 2.9            30 168     100 47
## 3.9            30 168     100 48
## 4.9            30 168     100 49
## 5.9            30 168     100 50
## 1.10           30 168     100 51
## 2.10           30 168     100 52
## 3.10           30 168     100 53
## 4.10           30 168     100 54
## 5.10           30 168     100 55
## 1.11           30 168     100 56
## 2.11           30 168     100 57
## 3.11           30 168     100 58
##  [ reached 'max' / getOption("max.print") -- omitted 137 rows ]
```

Run model

With set 2 parameters

```
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 groups: 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 136, 137, 138, 139, 140, 1

## 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, 4)
dat$EFp <- 100 * signif(preds$er, 4)
```