Model call record

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Calculates emission factors

Check package version.

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

```
## [1] '0.5.1'
```

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      app.mt
##           -0.60568338       -1.74351499       -0.01114900      0.39967070       -0.59202858       -7.63373787       -0.93921516         0.
##             man.ph.r1            int.r2       rain.rate.r2            int.r3     app.mthd.bc.r3     app.mthd.cs.r3          man.ph.r3 incorp.sh
##            0.66500000       -1.79918546        0.39402156       -3.22841225        0.56153956       -0.66647417         0.23800000        -0.
```

```
dat
```

```
##      app.timing.dk app.timing air.temp wind.2m rain.rate              app.mthd app.rate.ni        man.name man.source    acid man.dm m
## 1            Marts      March    4.900 4.02500      0.09          Trailing hose          30 Afgasset biomasse  Digestate    0 kg/t    5.1
## 2            April      April    8.500 3.91000      0.09          Trailing hose          30 Afgasset biomasse  Digestate    0 kg/t    5.1
## 3              Maj        May   12.400 3.56500      0.09          Trailing hose          30 Afgasset biomasse  Digestate    0 kg/t    5.1
## 4           Sommer     Summer   16.867 3.18167      0.09          Trailing hose          30 Afgasset biomasse  Digestate    0 kg/t    5.1
## 5           Efterår     Autumn  14.600 3.45000      0.09          Trailing hose          30 Afgasset biomasse  Digestate    0 kg/t    5.1
## 6            Marts      March    4.900 4.02500      0.09     Open slot injection           0 Afgasset biomasse  Digestate    0 kg/t    5.1
## 7            April      April    8.500 3.91000      0.09     Open slot injection           0 Afgasset biomasse  Digestate    0 kg/t    5.1
## 8              Maj        May   12.400 3.56500      0.09     Open slot injection           0 Afgasset biomasse  Digestate    0 kg/t    5.1
## 9           Sommer     Summer   16.867 3.18167      0.09     Open slot injection           0 Afgasset biomasse  Digestate    0 kg/t    5.1
## 10          Efterår     Autumn  14.600 3.45000      0.09     Open slot injection           0 Afgasset biomasse  Digestate    0 kg/t    5.1
## 11           Marts      March    4.900 4.02500      0.09   Closed slot injection           0 Afgasset biomasse  Digestate    0 kg/t    5.1
```

```
## 12       April     April   8.500 3.91000   0.09 Closed slot injection    0 Afgasset biomasse  Digestate   0 kg/t   5.1
## 13         Maj       May  12.400 3.56500   0.09 Closed slot injection    0 Afgasset biomasse  Digestate   0 kg/t   5.1
## 14      Sommer    Summer  16.867 3.18167   0.09 Closed slot injection    0 Afgasset biomasse  Digestate   0 kg/t   5.1
## 15     Efterår    Autumn  14.600 3.45000   0.09 Closed slot injection    0 Afgasset biomasse  Digestate   0 kg/t   5.1
## 16       Marts     March   4.900 4.02500   0.09           Trailing hose  30 Afgasset biomasse  Digestate  11 kg/t   5.1
## 17       April     April   8.500 3.91000   0.09           Trailing hose  30 Afgasset biomasse  Digestate  11 kg/t   5.1
## 18         Maj       May  12.400 3.56500   0.09           Trailing hose  30 Afgasset biomasse  Digestate  11 kg/t   5.1
## 19      Sommer    Summer  16.867 3.18167   0.09           Trailing hose  30 Afgasset biomasse  Digestate  11 kg/t   5.1
## 20     Efterår    Autumn  14.600 3.45000   0.09           Trailing hose  30 Afgasset biomasse  Digestate  11 kg/t   5.1
## 21       Marts     March   4.900 4.02500   0.09           Trailing hose  30 Afgasset biomasse  Digestate 2.1 kg/t   5.1
## 22       April     April   8.500 3.91000   0.09           Trailing hose  30 Afgasset biomasse  Digestate 2.1 kg/t   5.1
## 23         Maj       May  12.400 3.56500   0.09           Trailing hose  30 Afgasset biomasse  Digestate 2.1 kg/t   5.1
## 24      Sommer    Summer  16.867 3.18167   0.09           Trailing hose  30 Afgasset biomasse  Digestate 2.1 kg/t   5.1
## 25     Efterår    Autumn  14.600 3.45000   0.09           Trailing hose  30 Afgasset biomasse  Digestate 2.1 kg/t   5.1
```

Run model

With set 2 parameters

```
preds <- ALFAM2mod(dat, pars = ALFAM2pars02, app.name = 'tan.app', time.name = 'ct', group = 'id', warn = TRUE)
```

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

```
## Warning in ALFAM2mod(dat, pars = ALFAM2pars02, app.name = "tan.app", time.name = "ct", : Running with 15 parameters. Dropped 9 with no
## These secondary parameters have been dropped:
##   man.source.pig.f0
##   app.mthd.bc.r1
##   app.mthd.ts.r1
##   ts.cereal.hght.r1
##   app.mthd.bc.r3
##   incorp.shallow.f4
##   incorp.shallow.r3
##   incorp.deep.f4
##   incorp.deep.r3
##
## These secondary parameters are being used:
##   int.f0
##   app.mthd.os.f0
##   app.rate.ni.f0
##   man.dm.f0
##   app.mthd.cs.f0
```

```
##    int.r1
##    man.dm.r1
##    air.temp.r1
##    wind.2m.r1
##    man.ph.r1
##    int.r2
##    rain.rate.r2
##    int.r3
##    app.mthd.cs.r3
##    man.ph.r3
```

Check reference condition.

```
ALFAM2mod(ref, pars = ALFAM2pars01, app.name = 'tan.app', time.name = 'ct', time.incorp = 't.incorp', warn = TRUE)
```

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

## Warning in ALFAM2mod(ref, pars = ALFAM2pars01, app.name = "tan.app", time.name = "ct", : No matching column for incorporation parameter

## Warning in ALFAM2mod(ref, pars = ALFAM2pars01, app.name = "tan.app", time.name = "ct", : Running with 15 parameters. Dropped 5 with no
## These secondary parameters have been dropped:
##    app.rate.f0
##    incorp.deep.f4
##    incorp.shallow.f4
##    incorp.deep.r3
##    rain.cum.r3
##
## These secondary parameters are being used:
##    int.f0
##    int.r1
##    int.r2
##    int.r3
##    app.mthd.os.f0
##    man.dm.f0
##    app.mthd.bc.r1
##    man.dm.r1
##    air.temp.r1
##    wind.2m.r1
##    man.ph.r1
##    air.temp.r3
##    app.mthd.os.r3
```

```
##    man.ph.r3
##    rain.rate.r2

##    ct  dt        f0          r1        r2          r3 f4         f          s         j         e     e.int        er
## 1 168 168 0.3237724 0.06628499 0.1110777 0.001255181  1 3.7119e-12 71.30525 0.1708021 28.69475 28.69475 0.2869475
```
```r
ALFAM2mod(ref, pars = ALFAM2pars02, app.name = 'tan.app', time.name = 'ct', time.incorp = 't.incorp', warn = TRUE)
```
```
## User-supplied parameters are being used.

## Warning in ALFAM2mod(ref, pars = ALFAM2pars02, app.name = "tan.app", time.name = "ct", : No matching column for incorporation parameter

## Warning in ALFAM2mod(ref, pars = ALFAM2pars02, app.name = "tan.app", time.name = "ct", : Running with 20 parameters. Dropped 4 with no
## These secondary parameters have been dropped:
##    incorp.shallow.f4
##    incorp.shallow.r3
##    incorp.deep.f4
##    incorp.deep.r3
##
## These secondary parameters are being used:
##    int.f0
##    app.mthd.os.f0
##    app.rate.ni.f0
##    man.dm.f0
##    man.source.pig.f0
##    app.mthd.cs.f0
##    int.r1
##    app.mthd.bc.r1
##    man.dm.r1
##    air.temp.r1
##    wind.2m.r1
##    app.mthd.ts.r1
##    ts.cereal.hght.r1
##    man.ph.r1
##    int.r2
##    rain.rate.r2
##    int.r3
##    app.mthd.bc.r3
##    app.mthd.cs.r3
##    man.ph.r3

##    ct  dt        f0          r1        r2          r3 f4         f          s         j         e     e.int        er
```

```
## 1 168 168 0.2589096 0.115023 0.01587869 0.0005910004  1 7.283926e-09 69.96107 0.1788032 30.03893 30.03893 0.3003893
```

Add results to main df

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