Model call record

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September 2020

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
##       -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.dk app.timing air.temp wind.2m rain.rate app.mthd incorp
## 1           Marts      March    4.900 4.02500      0.09     bsth   none
## 2           April      April    8.500 3.91000      0.09     bsth   none
## 3             Maj        May   12.400 3.56500      0.09     bsth   none
```

```
## 4          Sommer     Summer   16.867 3.18167      0.09     bsth   none
## 5         Efterår     Autumn   14.600 3.45000      0.09     bsth   none
## 1.1         Marts      March    4.900 4.02500      0.09     bsth   none
## 2.1         April      April    8.500 3.91000      0.09     bsth   none
## 3.1           Maj        May   12.400 3.56500      0.09     bsth   none
## 4.1        Sommer     Summer   16.867 3.18167      0.09     bsth   none
## 5.1       Efterår     Autumn   14.600 3.45000      0.09     bsth   none
## 1.2         Marts      March    4.900 4.02500      0.09     bsth   none
## 2.2         April      April    8.500 3.91000      0.09     bsth   none
## 3.2           Maj        May   12.400 3.56500      0.09     bsth   none
## 4.2        Sommer     Summer   16.867 3.18167      0.09     bsth   none
## 5.2       Efterår     Autumn   14.600 3.45000      0.09     bsth   none
##     t.incorp app.rate.ni          man.name man.source man.dm man.ph
## 1         NA          30        Svinegylle        pig    3.9    7.2
## 2         NA          30        Svinegylle        pig    3.9    7.2
## 3         NA          30        Svinegylle        pig    3.9    7.2
## 4         NA          30        Svinegylle        pig    3.9    7.2
## 5         NA          30        Svinegylle        pig    3.9    7.2
## 1.1       NA          30         Kvæggylle     cattle    6.5    7.0
## 2.1       NA          30         Kvæggylle     cattle    6.5    7.0
## 3.1       NA          30         Kvæggylle     cattle    6.5    7.0
## 4.1       NA          30         Kvæggylle     cattle    6.5    7.0
## 5.1       NA          30         Kvæggylle     cattle    6.5    7.0
## 1.2       NA          30 Agfasset biomasse  digestate    5.1    7.9
## 2.2       NA          30 Agfasset biomasse  digestate    5.1    7.9
## 3.2       NA          30 Agfasset biomasse  digestate    5.1    7.9
## 4.2       NA          30 Agfasset biomasse  digestate    5.1    7.9
## 5.2       NA          30 Agfasset biomasse  digestate    5.1    7.9
##     man.source.pig  ct tan.app id
## 1             TRUE 168     100  1
## 2             TRUE 168     100  2
## 3             TRUE 168     100  3
## 4             TRUE 168     100  4
## 5             TRUE 168     100  5
## 1.1          FALSE 168     100  6
## 2.1          FALSE 168     100  7
## 3.1          FALSE 168     100  8
## 4.1          FALSE 168     100  9
## 5.1          FALSE 168     100 10
```

```
## 1.2          FALSE 168     100 11
## 2.2          FALSE 168     100 12
## 3.2          FALSE 168     100 13
## 4.2          FALSE 168     100 14
## 5.2          FALSE 168     100 15
```

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)
```

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

```
## Warning in ALFAM2mod(dat, pars = ALFAM2pars02, app.name = "tan.app", time.name
## = "ct", : No matching column for incorporation parameter(s): incorp.shallow,
## incorp.deep. Skipping incorporation.
```

```
## Warning in ALFAM2mod(dat, pars = ALFAM2pars02, app.name = "tan.app", time.name = "ct", : Running with 13 parameters. Dropped 11 with no
## These secondary parameters have been dropped:
##   app.mthd.os.f0
##   app.mthd.cs.f0
##   app.mthd.bc.r1
##   app.mthd.ts.r1
##   ts.cereal.hght.r1
##   app.mthd.bc.r3
##   app.mthd.cs.r3
##   incorp.shallow.f4
##   incorp.shallow.r3
##   incorp.deep.f4
##   incorp.deep.r3
##
## These secondary parameters are being used:
##   int.f0
##   app.rate.ni.f0
##   man.dm.f0
##   man.source.pig.f0
##   int.r1
##   man.dm.r1
##   air.temp.r1
##   wind.2m.r1
##   man.ph.r1
```

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

```
digpreds <- ALFAM2mod(digdat, pars = ALFAM2pars02, app.name = 'tan.app', time.name = 'ct', time.incorp = 't.incorp', group = 'id', warn =
```

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

```
## Warning in ALFAM2mod(digdat, pars = ALFAM2pars02, app.name = "tan.app", : No
## matching column for incorporation parameter(s): incorp.shallow, incorp.deep.
## Skipping incorporation.
```

```
## Warning in ALFAM2mod(digdat, pars = ALFAM2pars02, app.name = "tan.app", : Running with 12 parameters. Dropped 12 with no match.
## These secondary parameters have been dropped:
##   app.mthd.os.f0
##   man.source.pig.f0
##   app.mthd.cs.f0
##   app.mthd.bc.r1
##   app.mthd.ts.r1
##   ts.cereal.hght.r1
##   app.mthd.bc.r3
##   app.mthd.cs.r3
##   incorp.shallow.f4
##   incorp.shallow.r3
##   incorp.deep.f4
##   incorp.deep.r3
##
## These secondary parameters are being used:
##   int.f0
##   app.rate.ni.f0
##   man.dm.f0
##   int.r1
##   man.dm.r1
##   air.temp.r1
##   wind.2m.r1
##   man.ph.r1
##   int.r2
##   rain.rate.r2
##   int.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(s): incorp.deep,
## incorp.shallow. Skipping incorporation.
```

```
## 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
## 1 168 168 0.3237724 0.06628499 0.1110777 0.001255181  1 3.7119e-12 71.30525
##           j        e    e.int        er
## 1 0.1708021 28.69475 28.69475 0.2869475
```

```
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(s): incorp.shallow,
## incorp.deep. Skipping incorporation.

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

Add results to main df

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

```r
digdat$EF <- digpreds$er
```