

Model call record

Sasha D. Hafner

Calculates emission factors

Check package version.

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

```
## [1] '1.5.1'
```

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
## 1	Marts	March	4.431012	4.058916	0.05996290	Trailing hose
## 2	April	April	8.236460	3.844456	0.05521194	Trailing hose
## 3	Maj	May	12.449250	3.483915	0.07029935	Trailing hose
## 4	Sommer	Summer	16.876226	3.156240	0.10592531	Trailing hose

## 5	Efterår	Autumn	14.497748	3.322770	0.12826017		Trailing hose
## 6	Marts	March	4.431012	4.058916	0.05996290	Open slot injection	
## 7	April	April	8.236460	3.844456	0.05521194	Open slot injection	
## 8	Maj	May	12.449250	3.483915	0.07029935	Open slot injection	
## 9	Sommer	Summer	16.876226	3.156240	0.10592531	Open slot injection	
## 10	Efterår	Autumn	14.497748	3.322770	0.12826017	Open slot injection	
## 11	Marts	March	4.431012	4.058916	0.05996290	Closed slot injection	
## 12	April	April	8.236460	3.844456	0.05521194	Closed slot injection	
## 13	Maj	May	12.449250	3.483915	0.07029935	Closed slot injection	
## 14	Sommer	Summer	16.876226	3.156240	0.10592531	Closed slot injection	
## 15	Efterår	Autumn	14.497748	3.322770	0.12826017	Closed slot injection	
## 16	Marts	March	4.431012	4.058916	0.05996290	Trailing hose	
## 17	April	April	8.236460	3.844456	0.05521194	Trailing hose	
## 18	Maj	May	12.449250	3.483915	0.07029935	Trailing hose	
## 19	Sommer	Summer	16.876226	3.156240	0.10592531	Trailing hose	
## 20	Efterår	Autumn	14.497748	3.322770	0.12826017	Trailing hose	
## 21	Marts	March	4.431012	4.058916	0.05996290	Trailing hose	
## 22	April	April	8.236460	3.844456	0.05521194	Trailing hose	
## 23	Maj	May	12.449250	3.483915	0.07029935	Trailing hose	
## 24	Sommer	Summer	16.876226	3.156240	0.10592531	Trailing hose	
## 25	Efterår	Autumn	14.497748	3.322770	0.12826017	Trailing hose	
## 26	Marts	March	4.431012	4.058916	0.05996290	Trailing hose	
## 27	April	April	8.236460	3.844456	0.05521194	Trailing hose	
## 28	Maj	May	12.449250	3.483915	0.07029935	Trailing hose	
## 29	Sommer	Summer	16.876226	3.156240	0.10592531	Trailing hose	
## 30	Efterår	Autumn	14.497748	3.322770	0.12826017	Trailing hose	
##	app.rate.ni	man.source	acid	man.dm	man.ph	ct	tan.app id
## 1	30	Afgasset biomasse	0 kg/t	5.1	7.90	168	100 1
## 2	30	Afgasset biomasse	0 kg/t	5.1	7.90	168	100 2
## 3	30	Afgasset biomasse	0 kg/t	5.1	7.90	168	100 3
## 4	30	Afgasset biomasse	0 kg/t	5.1	7.90	168	100 4
## 5	30	Afgasset biomasse	0 kg/t	5.1	7.90	168	100 5
## 6	0	Afgasset biomasse	0 kg/t	5.1	7.90	168	100 6
## 7	0	Afgasset biomasse	0 kg/t	5.1	7.90	168	100 7
## 8	0	Afgasset biomasse	0 kg/t	5.1	7.90	168	100 8
## 9	0	Afgasset biomasse	0 kg/t	5.1	7.90	168	100 9
## 10	0	Afgasset biomasse	0 kg/t	5.1	7.90	168	100 10
## 11	0	Afgasset biomasse	0 kg/t	5.1	7.90	168	100 11
## 12	0	Afgasset biomasse	0 kg/t	5.1	7.90	168	100 12

```
## 13      0 Afgasset biomasse  0 kg/t  5.1  7.90 168    100 13
## 14      0 Afgasset biomasse  0 kg/t  5.1  7.90 168    100 14
## 15      0 Afgasset biomasse  0 kg/t  5.1  7.90 168    100 15
## 16     30 Afgasset biomasse 11 kg/t  5.1  6.52 168    100 16
## 17     30 Afgasset biomasse 11 kg/t  5.1  6.52 168    100 17
## 18     30 Afgasset biomasse 11 kg/t  5.1  6.52 168    100 18
## 19     30 Afgasset biomasse 11 kg/t  5.1  6.52 168    100 19
## 20     30 Afgasset biomasse 11 kg/t  5.1  6.52 168    100 20
## 21     30 Afgasset biomasse 3.4 kg/t  5.1  7.19 168    100 21
## 22     30 Afgasset biomasse 3.4 kg/t  5.1  7.19 168    100 22
## 23     30 Afgasset biomasse 3.4 kg/t  5.1  7.19 168    100 23
## 24     30 Afgasset biomasse 3.4 kg/t  5.1  7.19 168    100 24
## 25     30 Afgasset biomasse 3.4 kg/t  5.1  7.19 168    100 25
## 26     30 Afgasset biomasse 7.5 kg/t  5.1  6.79 168    100 26
## 27     30 Afgasset biomasse 7.5 kg/t  5.1  6.79 168    100 27
## 28     30 Afgasset biomasse 7.5 kg/t  5.1  6.79 168    100 28
## 29     30 Afgasset biomasse 7.5 kg/t  5.1  6.79 168    100 29
## 30     30 Afgasset biomasse 7.5 kg/t  5.1  6.79 168    100 30
```

Run model

With set 2 parameters

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

```
## 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(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

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