

# 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

```
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

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