

# Model call record

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11 January, 2022

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	scenario	man.source
## 1	Marts	4.431012	4.058916	0.05996290	reference	Svinegylle
## 2	April	8.236460	3.844456	0.05521194	reference	Svinegylle
## 3	Maj	12.449250	3.483915	0.07029935	reference	Svinegylle

## 4	Sommer	16.876226	3.156240	0.10592531	reference	Svinegylle
## 5	Efterår	14.497748	3.322770	0.12826017	reference	Svinegylle
## 1.1	Marts	4.431012	4.058916	0.05996290	reference	Kvæggylle
## 2.1	April	8.236460	3.844456	0.05521194	reference	Kvæggylle
## 3.1	Maj	12.449250	3.483915	0.07029935	reference	Kvæggylle
## 4.1	Sommer	16.876226	3.156240	0.10592531	reference	Kvæggylle
## 5.1	Efterår	14.497748	3.322770	0.12826017	reference	Kvæggylle
## 1.2	Marts	4.431012	4.058916	0.05996290	reference	Afgasset biomasse
## 2.2	April	8.236460	3.844456	0.05521194	reference	Afgasset biomasse
## 3.2	Maj	12.449250	3.483915	0.07029935	reference	Afgasset biomasse
## 4.2	Sommer	16.876226	3.156240	0.10592531	reference	Afgasset biomasse
## 5.2	Efterår	14.497748	3.322770	0.12826017	reference	Afgasset biomasse
## 1.3	Marts	4.431012	4.058916	0.05996290	low	Svinegylle
## 2.3	April	8.236460	3.844456	0.05521194	low	Svinegylle
## 3.3	Maj	12.449250	3.483915	0.07029935	low	Svinegylle
## 4.3	Sommer	16.876226	3.156240	0.10592531	low	Svinegylle
## 5.3	Efterår	14.497748	3.322770	0.12826017	low	Svinegylle
## 1.4	Marts	4.431012	4.058916	0.05996290	low	Kvæggylle
## 2.4	April	8.236460	3.844456	0.05521194	low	Kvæggylle
## 3.4	Maj	12.449250	3.483915	0.07029935	low	Kvæggylle
## 4.4	Sommer	16.876226	3.156240	0.10592531	low	Kvæggylle
## 5.4	Efterår	14.497748	3.322770	0.12826017	low	Kvæggylle
## 1.5	Marts	4.431012	4.058916	0.05996290	low	Afgasset biomasse
## 2.5	April	8.236460	3.844456	0.05521194	low	Afgasset biomasse
## 3.5	Maj	12.449250	3.483915	0.07029935	low	Afgasset biomasse
## 4.5	Sommer	16.876226	3.156240	0.10592531	low	Afgasset biomasse
## 5.5	Efterår	14.497748	3.322770	0.12826017	low	Afgasset biomasse
## 1.6	Marts	4.431012	4.058916	0.05996290	mid	Svinegylle
## 2.6	April	8.236460	3.844456	0.05521194	mid	Svinegylle
## 3.6	Maj	12.449250	3.483915	0.07029935	mid	Svinegylle
## 4.6	Sommer	16.876226	3.156240	0.10592531	mid	Svinegylle
## 5.6	Efterår	14.497748	3.322770	0.12826017	mid	Svinegylle
## 1.7	Marts	4.431012	4.058916	0.05996290	mid	Kvæggylle
## 2.7	April	8.236460	3.844456	0.05521194	mid	Kvæggylle
## 3.7	Maj	12.449250	3.483915	0.07029935	mid	Kvæggylle
## 4.7	Sommer	16.876226	3.156240	0.10592531	mid	Kvæggylle
## 5.7	Efterår	14.497748	3.322770	0.12826017	mid	Kvæggylle
## 1.8	Marts	4.431012	4.058916	0.05996290	mid	Afgasset biomasse
## 2.8	April	8.236460	3.844456	0.05521194	mid	Afgasset biomasse

## 3.8	Maj	12.449250	3.483915	0.07029935	mid	Afgasset	biomasse
## 4.8	Sommer	16.876226	3.156240	0.10592531	mid	Afgasset	biomasse
## 5.8	Efterår	14.497748	3.322770	0.12826017	mid	Afgasset	biomasse
## 1.9	Marts	4.431012	4.058916	0.05996290	high	Svinegylle	
## 2.9	April	8.236460	3.844456	0.05521194	high	Svinegylle	
## 3.9	Maj	12.449250	3.483915	0.07029935	high	Svinegylle	
## 4.9	Sommer	16.876226	3.156240	0.10592531	high	Svinegylle	
## 5.9	Efterår	14.497748	3.322770	0.12826017	high	Svinegylle	
## 1.10	Marts	4.431012	4.058916	0.05996290	high	Kvæggylle	
## 2.10	April	8.236460	3.844456	0.05521194	high	Kvæggylle	
## 3.10	Maj	12.449250	3.483915	0.07029935	high	Kvæggylle	
## 4.10	Sommer	16.876226	3.156240	0.10592531	high	Kvæggylle	
## 5.10	Efterår	14.497748	3.322770	0.12826017	high	Kvæggylle	
## 1.11	Marts	4.431012	4.058916	0.05996290	high	Afgasset	biomasse
## 2.11	April	8.236460	3.844456	0.05521194	high	Afgasset	biomasse
## 3.11	Maj	12.449250	3.483915	0.07029935	high	Afgasset	biomasse
## 4.11	Sommer	16.876226	3.156240	0.10592531	high	Afgasset	biomasse
## 5.11	Efterår	14.497748	3.322770	0.12826017	high	Afgasset	biomasse
## 1.12	Marts	4.431012	4.058916	0.05996290	high2	Svinegylle	
## 2.12	April	8.236460	3.844456	0.05521194	high2	Svinegylle	
## 3.12	Maj	12.449250	3.483915	0.07029935	high2	Svinegylle	
## 4.12	Sommer	16.876226	3.156240	0.10592531	high2	Svinegylle	
## 5.12	Efterår	14.497748	3.322770	0.12826017	high2	Svinegylle	
## 1.13	Marts	4.431012	4.058916	0.05996290	high2	Kvæggylle	
## 2.13	April	8.236460	3.844456	0.05521194	high2	Kvæggylle	
## 3.13	Maj	12.449250	3.483915	0.07029935	high2	Kvæggylle	
## 4.13	Sommer	16.876226	3.156240	0.10592531	high2	Kvæggylle	
## 5.13	Efterår	14.497748	3.322770	0.12826017	high2	Kvæggylle	
## 1.14	Marts	4.431012	4.058916	0.05996290	high2	Afgasset	biomasse
## 2.14	April	8.236460	3.844456	0.05521194	high2	Afgasset	biomasse
## 3.14	Maj	12.449250	3.483915	0.07029935	high2	Afgasset	biomasse
## 4.14	Sommer	16.876226	3.156240	0.10592531	high2	Afgasset	biomasse
## 5.14	Efterår	14.497748	3.322770	0.12826017	high2	Afgasset	biomasse
## 1.15	Marts	4.431012	4.058916	0.05996290	low	Svinegylle	
## 2.15	April	8.236460	3.844456	0.05521194	low	Svinegylle	
## 3.15	Maj	12.449250	3.483915	0.07029935	low	Svinegylle	
## 4.15	Sommer	16.876226	3.156240	0.10592531	low	Svinegylle	
## 5.15	Efterår	14.497748	3.322770	0.12826017	low	Svinegylle	
## 1.16	Marts	4.431012	4.058916	0.05996290	low	Kvæggylle	

## 2.16	April	8.236460	3.844456	0.05521194	low	Kvæggylle
## 3.16	Maj	12.449250	3.483915	0.07029935	low	Kvæggylle
## 4.16	Sommer	16.876226	3.156240	0.10592531	low	Kvæggylle
## 5.16	Efterår	14.497748	3.322770	0.12826017	low	Kvæggylle
## 1.17	Marts	4.431012	4.058916	0.05996290	low	Afgasset biomasse
## 2.17	April	8.236460	3.844456	0.05521194	low	Afgasset biomasse
## 3.17	Maj	12.449250	3.483915	0.07029935	low	Afgasset biomasse
## 4.17	Sommer	16.876226	3.156240	0.10592531	low	Afgasset biomasse
## 5.17	Efterår	14.497748	3.322770	0.12826017	low	Afgasset biomasse
## 1.18	Marts	4.431012	4.058916	0.05996290	low	Svinegylle
## 2.18	April	8.236460	3.844456	0.05521194	low	Svinegylle
## 3.18	Maj	12.449250	3.483915	0.07029935	low	Svinegylle
## 4.18	Sommer	16.876226	3.156240	0.10592531	low	Svinegylle
## 5.18	Efterår	14.497748	3.322770	0.12826017	low	Svinegylle
## 1.19	Marts	4.431012	4.058916	0.05996290	low	Kvæggylle
## 2.19	April	8.236460	3.844456	0.05521194	low	Kvæggylle
## 3.19	Maj	12.449250	3.483915	0.07029935	low	Kvæggylle
## 4.19	Sommer	16.876226	3.156240	0.10592531	low	Kvæggylle
## 5.19	Efterår	14.497748	3.322770	0.12826017	low	Kvæggylle
## 1.20	Marts	4.431012	4.058916	0.05996290	low	Afgasset biomasse
## 2.20	April	8.236460	3.844456	0.05521194	low	Afgasset biomasse
## 3.20	Maj	12.449250	3.483915	0.07029935	low	Afgasset biomasse
## 4.20	Sommer	16.876226	3.156240	0.10592531	low	Afgasset biomasse
## 5.20	Efterår	14.497748	3.322770	0.12826017	low	Afgasset biomasse
## 1.21	Marts	4.431012	4.058916	0.05996290	mid	Svinegylle
## 2.21	April	8.236460	3.844456	0.05521194	mid	Svinegylle
## 3.21	Maj	12.449250	3.483915	0.07029935	mid	Svinegylle
## 4.21	Sommer	16.876226	3.156240	0.10592531	mid	Svinegylle
## 5.21	Efterår	14.497748	3.322770	0.12826017	mid	Svinegylle
## 1.22	Marts	4.431012	4.058916	0.05996290	mid	Kvæggylle
## 2.22	April	8.236460	3.844456	0.05521194	mid	Kvæggylle
## 3.22	Maj	12.449250	3.483915	0.07029935	mid	Kvæggylle
## 4.22	Sommer	16.876226	3.156240	0.10592531	mid	Kvæggylle
## 5.22	Efterår	14.497748	3.322770	0.12826017	mid	Kvæggylle
## 1.23	Marts	4.431012	4.058916	0.05996290	mid	Afgasset biomasse
## 2.23	April	8.236460	3.844456	0.05521194	mid	Afgasset biomasse
## 3.23	Maj	12.449250	3.483915	0.07029935	mid	Afgasset biomasse
## 4.23	Sommer	16.876226	3.156240	0.10592531	mid	Afgasset biomasse
## 5.23	Efterår	14.497748	3.322770	0.12826017	mid	Afgasset biomasse

## 1.24	Marts	4.431012	4.058916	0.05996290	mid	Svinegylle
## 2.24	April	8.236460	3.844456	0.05521194	mid	Svinegylle
## 3.24	Maj	12.449250	3.483915	0.07029935	mid	Svinegylle
## 4.24	Sommer	16.876226	3.156240	0.10592531	mid	Svinegylle
## 5.24	Efterår	14.497748	3.322770	0.12826017	mid	Svinegylle
## 1.25	Marts	4.431012	4.058916	0.05996290	mid	Kvæggylle
## 2.25	April	8.236460	3.844456	0.05521194	mid	Kvæggylle
## 3.25	Maj	12.449250	3.483915	0.07029935	mid	Kvæggylle
## 4.25	Sommer	16.876226	3.156240	0.10592531	mid	Kvæggylle
## 5.25	Efterår	14.497748	3.322770	0.12826017	mid	Kvæggylle
## 1.26	Marts	4.431012	4.058916	0.05996290	mid	Afgasset biomasse
## 2.26	April	8.236460	3.844456	0.05521194	mid	Afgasset biomasse
## 3.26	Maj	12.449250	3.483915	0.07029935	mid	Afgasset biomasse
## 4.26	Sommer	16.876226	3.156240	0.10592531	mid	Afgasset biomasse
## 5.26	Efterår	14.497748	3.322770	0.12826017	mid	Afgasset biomasse
## 1.27	Marts	4.431012	4.058916	0.05996290	high	Svinegylle
## 2.27	April	8.236460	3.844456	0.05521194	high	Svinegylle
## 3.27	Maj	12.449250	3.483915	0.07029935	high	Svinegylle
## 4.27	Sommer	16.876226	3.156240	0.10592531	high	Svinegylle
## 5.27	Efterår	14.497748	3.322770	0.12826017	high	Svinegylle
## 1.28	Marts	4.431012	4.058916	0.05996290	high	Kvæggylle
## 2.28	April	8.236460	3.844456	0.05521194	high	Kvæggylle
## 3.28	Maj	12.449250	3.483915	0.07029935	high	Kvæggylle
## 4.28	Sommer	16.876226	3.156240	0.10592531	high	Kvæggylle
## 5.28	Efterår	14.497748	3.322770	0.12826017	high	Kvæggylle
## 1.29	Marts	4.431012	4.058916	0.05996290	high	Afgasset biomasse
## 2.29	April	8.236460	3.844456	0.05521194	high	Afgasset biomasse
## 3.29	Maj	12.449250	3.483915	0.07029935	high	Afgasset biomasse
## 4.29	Sommer	16.876226	3.156240	0.10592531	high	Afgasset biomasse
## 5.29	Efterår	14.497748	3.322770	0.12826017	high	Afgasset biomasse
## 1.30	Marts	4.431012	4.058916	0.05996290	high	Svinegylle
## 2.30	April	8.236460	3.844456	0.05521194	high	Svinegylle
## 3.30	Maj	12.449250	3.483915	0.07029935	high	Svinegylle
## 4.30	Sommer	16.876226	3.156240	0.10592531	high	Svinegylle
## 5.30	Efterår	14.497748	3.322770	0.12826017	high	Svinegylle
## 1.31	Marts	4.431012	4.058916	0.05996290	high	Kvæggylle
## 2.31	April	8.236460	3.844456	0.05521194	high	Kvæggylle
## 3.31	Maj	12.449250	3.483915	0.07029935	high	Kvæggylle
## 4.31	Sommer	16.876226	3.156240	0.10592531	high	Kvæggylle

##	5.31	Efterår	14.497748	3.322770	0.12826017	high	Kvæggylle		
##	1.32	Marts	4.431012	4.058916	0.05996290	high	Afgasset biomasse		
##	2.32	April	8.236460	3.844456	0.05521194	high	Afgasset biomasse		
##	3.32	Maj	12.449250	3.483915	0.07029935	high	Afgasset biomasse		
##	4.32	Sommer	16.876226	3.156240	0.10592531	high	Afgasset biomasse		
##	5.32	Efterår	14.497748	3.322770	0.12826017	high	Afgasset biomasse		
##	1.33	Marts	4.431012	4.058916	0.05996290	high2	Svinegylle		
##	2.33	April	8.236460	3.844456	0.05521194	high2	Svinegylle		
##	3.33	Maj	12.449250	3.483915	0.07029935	high2	Svinegylle		
##	4.33	Sommer	16.876226	3.156240	0.10592531	high2	Svinegylle		
##	5.33	Efterår	14.497748	3.322770	0.12826017	high2	Svinegylle		
##	1.34	Marts	4.431012	4.058916	0.05996290	high2	Kvæggylle		
##	2.34	April	8.236460	3.844456	0.05521194	high2	Kvæggylle		
##	3.34	Maj	12.449250	3.483915	0.07029935	high2	Kvæggylle		
##	4.34	Sommer	16.876226	3.156240	0.10592531	high2	Kvæggylle		
##	5.34	Efterår	14.497748	3.322770	0.12826017	high2	Kvæggylle		
##	1.35	Marts	4.431012	4.058916	0.05996290	high2	Afgasset biomasse		
##	2.35	April	8.236460	3.844456	0.05521194	high2	Afgasset biomasse		
##	3.35	Maj	12.449250	3.483915	0.07029935	high2	Afgasset biomasse		
##	4.35	Sommer	16.876226	3.156240	0.10592531	high2	Afgasset biomasse		
##	5.35	Efterår	14.497748	3.322770	0.12826017	high2	Afgasset biomasse		
##	1.36	Marts	4.431012	4.058916	0.05996290	high2	Svinegylle		
##	2.36	April	8.236460	3.844456	0.05521194	high2	Svinegylle		
##	3.36	Maj	12.449250	3.483915	0.07029935	high2	Svinegylle		
##	4.36	Sommer	16.876226	3.156240	0.10592531	high2	Svinegylle		
##	5.36	Efterår	14.497748	3.322770	0.12826017	high2	Svinegylle		
##	1.37	Marts	4.431012	4.058916	0.05996290	high2	Kvæggylle		
##	2.37	April	8.236460	3.844456	0.05521194	high2	Kvæggylle		
##	3.37	Maj	12.449250	3.483915	0.07029935	high2	Kvæggylle		
##	4.37	Sommer	16.876226	3.156240	0.10592531	high2	Kvæggylle		
##	5.37	Efterår	14.497748	3.322770	0.12826017	high2	Kvæggylle		
##	1.38	Marts	4.431012	4.058916	0.05996290	high2	Afgasset biomasse		
##	2.38	April	8.236460	3.844456	0.05521194	high2	Afgasset biomasse		
##	3.38	Maj	12.449250	3.483915	0.07029935	high2	Afgasset biomasse		
##	4.38	Sommer	16.876226	3.156240	0.10592531	high2	Afgasset biomasse		
##	5.38	Efterår	14.497748	3.322770	0.12826017	high2	Afgasset biomasse		
##		fraction	red.dm	man.dm	man.ph	incorp	app.mthd	t.incorp	app.rate.ni
##	1	raw	0	3.900	7.2	none	Trailing hose	NA	30
##	2	raw	0	3.900	7.2	none	Trailing hose	NA	30

## 3	raw	0	3.900	7.2	none	Trailing hose	NA	30
## 4	raw	0	3.900	7.2	none	Trailing hose	NA	30
## 5	raw	0	3.900	7.2	none	Trailing hose	NA	30
## 1.1	raw	0	6.500	7.0	none	Trailing hose	NA	30
## 2.1	raw	0	6.500	7.0	none	Trailing hose	NA	30
## 3.1	raw	0	6.500	7.0	none	Trailing hose	NA	30
## 4.1	raw	0	6.500	7.0	none	Trailing hose	NA	30
## 5.1	raw	0	6.500	7.0	none	Trailing hose	NA	30
## 1.2	raw	0	5.900	7.9	none	Trailing hose	NA	30
## 2.2	raw	0	5.900	7.9	none	Trailing hose	NA	30
## 3.2	raw	0	5.900	7.9	none	Trailing hose	NA	30
## 4.2	raw	0	5.900	7.9	none	Trailing hose	NA	30
## 5.2	raw	0	5.900	7.9	none	Trailing hose	NA	30
## 1.3	liquid	0.55	1.755	7.2	none	Trailing hose	NA	30
## 2.3	liquid	0.55	1.755	7.2	none	Trailing hose	NA	30
## 3.3	liquid	0.55	1.755	7.2	none	Trailing hose	NA	30
## 4.3	liquid	0.55	1.755	7.2	none	Trailing hose	NA	30
## 5.3	liquid	0.55	1.755	7.2	none	Trailing hose	NA	30
## 1.4	liquid	0.55	2.925	7.0	none	Trailing hose	NA	30
## 2.4	liquid	0.55	2.925	7.0	none	Trailing hose	NA	30
## 3.4	liquid	0.55	2.925	7.0	none	Trailing hose	NA	30
## 4.4	liquid	0.55	2.925	7.0	none	Trailing hose	NA	30
## 5.4	liquid	0.55	2.925	7.0	none	Trailing hose	NA	30
## 1.5	liquid	0.55	2.655	7.9	none	Trailing hose	NA	30
## 2.5	liquid	0.55	2.655	7.9	none	Trailing hose	NA	30
## 3.5	liquid	0.55	2.655	7.9	none	Trailing hose	NA	30
## 4.5	liquid	0.55	2.655	7.9	none	Trailing hose	NA	30
## 5.5	liquid	0.55	2.655	7.9	none	Trailing hose	NA	30
## 1.6	liquid	0.35	2.535	7.2	none	Trailing hose	NA	30
## 2.6	liquid	0.35	2.535	7.2	none	Trailing hose	NA	30
## 3.6	liquid	0.35	2.535	7.2	none	Trailing hose	NA	30
## 4.6	liquid	0.35	2.535	7.2	none	Trailing hose	NA	30
## 5.6	liquid	0.35	2.535	7.2	none	Trailing hose	NA	30
## 1.7	liquid	0.35	4.225	7.0	none	Trailing hose	NA	30
## 2.7	liquid	0.35	4.225	7.0	none	Trailing hose	NA	30
## 3.7	liquid	0.35	4.225	7.0	none	Trailing hose	NA	30
## 4.7	liquid	0.35	4.225	7.0	none	Trailing hose	NA	30
## 5.7	liquid	0.35	4.225	7.0	none	Trailing hose	NA	30
## 1.8	liquid	0.35	3.835	7.9	none	Trailing hose	NA	30

## 2.8	liquid	0.35	3.835	7.9	none	Trailing hose	NA	30
## 3.8	liquid	0.35	3.835	7.9	none	Trailing hose	NA	30
## 4.8	liquid	0.35	3.835	7.9	none	Trailing hose	NA	30
## 5.8	liquid	0.35	3.835	7.9	none	Trailing hose	NA	30
## 1.9	liquid	0.15	3.315	7.2	none	Trailing hose	NA	30
## 2.9	liquid	0.15	3.315	7.2	none	Trailing hose	NA	30
## 3.9	liquid	0.15	3.315	7.2	none	Trailing hose	NA	30
## 4.9	liquid	0.15	3.315	7.2	none	Trailing hose	NA	30
## 5.9	liquid	0.15	3.315	7.2	none	Trailing hose	NA	30
## 1.10	liquid	0.15	5.525	7.0	none	Trailing hose	NA	30
## 2.10	liquid	0.15	5.525	7.0	none	Trailing hose	NA	30
## 3.10	liquid	0.15	5.525	7.0	none	Trailing hose	NA	30
## 4.10	liquid	0.15	5.525	7.0	none	Trailing hose	NA	30
## 5.10	liquid	0.15	5.525	7.0	none	Trailing hose	NA	30
## 1.11	liquid	0.15	5.015	7.9	none	Trailing hose	NA	30
## 2.11	liquid	0.15	5.015	7.9	none	Trailing hose	NA	30
## 3.11	liquid	0.15	5.015	7.9	none	Trailing hose	NA	30
## 4.11	liquid	0.15	5.015	7.9	none	Trailing hose	NA	30
## 5.11	liquid	0.15	5.015	7.9	none	Trailing hose	NA	30
## 1.12	liquid	0.15	3.315	7.2	none	Trailing hose	NA	30
## 2.12	liquid	0.15	3.315	7.2	none	Trailing hose	NA	30
## 3.12	liquid	0.15	3.315	7.2	none	Trailing hose	NA	30
## 4.12	liquid	0.15	3.315	7.2	none	Trailing hose	NA	30
## 5.12	liquid	0.15	3.315	7.2	none	Trailing hose	NA	30
## 1.13	liquid	0.15	5.525	7.0	none	Trailing hose	NA	30
## 2.13	liquid	0.15	5.525	7.0	none	Trailing hose	NA	30
## 3.13	liquid	0.15	5.525	7.0	none	Trailing hose	NA	30
## 4.13	liquid	0.15	5.525	7.0	none	Trailing hose	NA	30
## 5.13	liquid	0.15	5.525	7.0	none	Trailing hose	NA	30
## 1.14	liquid	0.15	5.015	7.9	none	Trailing hose	NA	30
## 2.14	liquid	0.15	5.015	7.9	none	Trailing hose	NA	30
## 3.14	liquid	0.15	5.015	7.9	none	Trailing hose	NA	30
## 4.14	liquid	0.15	5.015	7.9	none	Trailing hose	NA	30
## 5.14	liquid	0.15	5.015	7.9	none	Trailing hose	NA	30
## 1.15	solid	<NA>	15.000	7.2	deep	Broadcast	4	30
## 2.15	solid	<NA>	15.000	7.2	deep	Broadcast	4	30
## 3.15	solid	<NA>	15.000	7.2	deep	Broadcast	4	30
## 4.15	solid	<NA>	15.000	7.2	deep	Broadcast	4	30
## 5.15	solid	<NA>	15.000	7.2	deep	Broadcast	4	30



## 1.16	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 2.16	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 3.16	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 4.16	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 5.16	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 1.17	solid	<NA>	15.000	7.9	deep	Broadcast	4	30
## 2.17	solid	<NA>	15.000	7.9	deep	Broadcast	4	30
## 3.17	solid	<NA>	15.000	7.9	deep	Broadcast	4	30
## 4.17	solid	<NA>	15.000	7.9	deep	Broadcast	4	30
## 5.17	solid	<NA>	15.000	7.9	deep	Broadcast	4	30
## 1.18	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 2.18	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 3.18	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 4.18	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 5.18	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 1.19	solid	<NA>	15.000	7.0	none	Broadcast	NA	30
## 2.19	solid	<NA>	15.000	7.0	none	Broadcast	NA	30
## 3.19	solid	<NA>	15.000	7.0	none	Broadcast	NA	30
## 4.19	solid	<NA>	15.000	7.0	none	Broadcast	NA	30
## 5.19	solid	<NA>	15.000	7.0	none	Broadcast	NA	30
## 1.20	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
## 2.20	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
## 3.20	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
## 4.20	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
## 5.20	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
## 1.21	solid	<NA>	15.000	7.2	deep	Broadcast	4	30
## 2.21	solid	<NA>	15.000	7.2	deep	Broadcast	4	30
## 3.21	solid	<NA>	15.000	7.2	deep	Broadcast	4	30
## 4.21	solid	<NA>	15.000	7.2	deep	Broadcast	4	30
## 5.21	solid	<NA>	15.000	7.2	deep	Broadcast	4	30
## 1.22	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 2.22	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 3.22	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 4.22	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 5.22	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 1.23	solid	<NA>	15.000	7.9	deep	Broadcast	4	30
## 2.23	solid	<NA>	15.000	7.9	deep	Broadcast	4	30
## 3.23	solid	<NA>	15.000	7.9	deep	Broadcast	4	30
## 4.23	solid	<NA>	15.000	7.9	deep	Broadcast	4	30

## 5.23	solid	<NA>	15.000	7.9	deep	Broadcast	4	30
## 1.24	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 2.24	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 3.24	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 4.24	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 5.24	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 1.25	solid	<NA>	15.000	7.0	none	Broadcast	NA	30
## 2.25	solid	<NA>	15.000	7.0	none	Broadcast	NA	30
## 3.25	solid	<NA>	15.000	7.0	none	Broadcast	NA	30
## 4.25	solid	<NA>	15.000	7.0	none	Broadcast	NA	30
## 5.25	solid	<NA>	15.000	7.0	none	Broadcast	NA	30
## 1.26	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
## 2.26	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
## 3.26	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
## 4.26	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
## 5.26	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
## 1.27	solid	<NA>	15.000	7.2	deep	Broadcast	4	30
## 2.27	solid	<NA>	15.000	7.2	deep	Broadcast	4	30
## 3.27	solid	<NA>	15.000	7.2	deep	Broadcast	4	30
## 4.27	solid	<NA>	15.000	7.2	deep	Broadcast	4	30
## 5.27	solid	<NA>	15.000	7.2	deep	Broadcast	4	30
## 1.28	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 2.28	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 3.28	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 4.28	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 5.28	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 1.29	solid	<NA>	15.000	7.9	deep	Broadcast	4	30
## 2.29	solid	<NA>	15.000	7.9	deep	Broadcast	4	30
## 3.29	solid	<NA>	15.000	7.9	deep	Broadcast	4	30
## 4.29	solid	<NA>	15.000	7.9	deep	Broadcast	4	30
## 5.29	solid	<NA>	15.000	7.9	deep	Broadcast	4	30
## 1.30	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 2.30	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 3.30	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 4.30	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 5.30	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 1.31	solid	<NA>	15.000	7.0	none	Broadcast	NA	30
## 2.31	solid	<NA>	15.000	7.0	none	Broadcast	NA	30
## 3.31	solid	<NA>	15.000	7.0	none	Broadcast	NA	30

## 4.31	solid	<NA>	15.000	7.0	none	Broadcast	NA	30
## 5.31	solid	<NA>	15.000	7.0	none	Broadcast	NA	30
## 1.32	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
## 2.32	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
## 3.32	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
## 4.32	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
## 5.32	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
## 1.33	solid	<NA>	15.000	7.2	deep	Broadcast	4	30
## 2.33	solid	<NA>	15.000	7.2	deep	Broadcast	4	30
## 3.33	solid	<NA>	15.000	7.2	deep	Broadcast	4	30
## 4.33	solid	<NA>	15.000	7.2	deep	Broadcast	4	30
## 5.33	solid	<NA>	15.000	7.2	deep	Broadcast	4	30
## 1.34	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 2.34	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 3.34	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 4.34	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 5.34	solid	<NA>	15.000	7.0	deep	Broadcast	4	30
## 1.35	solid	<NA>	15.000	7.9	deep	Broadcast	4	30
## 2.35	solid	<NA>	15.000	7.9	deep	Broadcast	4	30
## 3.35	solid	<NA>	15.000	7.9	deep	Broadcast	4	30
## 4.35	solid	<NA>	15.000	7.9	deep	Broadcast	4	30
## 5.35	solid	<NA>	15.000	7.9	deep	Broadcast	4	30
## 1.36	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 2.36	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 3.36	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 4.36	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 5.36	solid	<NA>	15.000	7.2	none	Broadcast	NA	30
## 1.37	solid	<NA>	15.000	7.0	none	Broadcast	NA	30
## 2.37	solid	<NA>	15.000	7.0	none	Broadcast	NA	30
## 3.37	solid	<NA>	15.000	7.0	none	Broadcast	NA	30
## 4.37	solid	<NA>	15.000	7.0	none	Broadcast	NA	30
## 5.37	solid	<NA>	15.000	7.0	none	Broadcast	NA	30
## 1.38	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
## 2.38	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
## 3.38	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
## 4.38	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
## 5.38	solid	<NA>	15.000	7.9	none	Broadcast	NA	30
##	ct tan.app	id						
## 1	168	100	1					

##	2	168	100	2
##	3	168	100	3
##	4	168	100	4
##	5	168	100	5
##	1.1	168	100	6
##	2.1	168	100	7
##	3.1	168	100	8
##	4.1	168	100	9
##	5.1	168	100	10
##	1.2	168	100	11
##	2.2	168	100	12
##	3.2	168	100	13
##	4.2	168	100	14
##	5.2	168	100	15
##	1.3	168	100	16
##	2.3	168	100	17
##	3.3	168	100	18
##	4.3	168	100	19
##	5.3	168	100	20
##	1.4	168	100	21
##	2.4	168	100	22
##	3.4	168	100	23
##	4.4	168	100	24
##	5.4	168	100	25
##	1.5	168	100	26
##	2.5	168	100	27
##	3.5	168	100	28
##	4.5	168	100	29
##	5.5	168	100	30
##	1.6	168	100	31
##	2.6	168	100	32
##	3.6	168	100	33
##	4.6	168	100	34
##	5.6	168	100	35
##	1.7	168	100	36
##	2.7	168	100	37
##	3.7	168	100	38
##	4.7	168	100	39
##	5.7	168	100	40

##	1.8	168	100	41
##	2.8	168	100	42
##	3.8	168	100	43
##	4.8	168	100	44
##	5.8	168	100	45
##	1.9	168	100	46
##	2.9	168	100	47
##	3.9	168	100	48
##	4.9	168	100	49
##	5.9	168	100	50
##	1.10	168	100	51
##	2.10	168	100	52
##	3.10	168	100	53
##	4.10	168	100	54
##	5.10	168	100	55
##	1.11	168	100	56
##	2.11	168	100	57
##	3.11	168	100	58
##	4.11	168	100	59
##	5.11	168	100	60
##	1.12	168	100	61
##	2.12	168	100	62
##	3.12	168	100	63
##	4.12	168	100	64
##	5.12	168	100	65
##	1.13	168	100	66
##	2.13	168	100	67
##	3.13	168	100	68
##	4.13	168	100	69
##	5.13	168	100	70
##	1.14	168	100	71
##	2.14	168	100	72
##	3.14	168	100	73
##	4.14	168	100	74
##	5.14	168	100	75
##	1.15	168	100	76
##	2.15	168	100	77
##	3.15	168	100	78
##	4.15	168	100	79

##	5.15	168	100	80
##	1.16	168	100	81
##	2.16	168	100	82
##	3.16	168	100	83
##	4.16	168	100	84
##	5.16	168	100	85
##	1.17	168	100	86
##	2.17	168	100	87
##	3.17	168	100	88
##	4.17	168	100	89
##	5.17	168	100	90
##	1.18	168	100	91
##	2.18	168	100	92
##	3.18	168	100	93
##	4.18	168	100	94
##	5.18	168	100	95
##	1.19	168	100	96
##	2.19	168	100	97
##	3.19	168	100	98
##	4.19	168	100	99
##	5.19	168	100	100
##	1.20	168	100	101
##	2.20	168	100	102
##	3.20	168	100	103
##	4.20	168	100	104
##	5.20	168	100	105
##	1.21	168	100	106
##	2.21	168	100	107
##	3.21	168	100	108
##	4.21	168	100	109
##	5.21	168	100	110
##	1.22	168	100	111
##	2.22	168	100	112
##	3.22	168	100	113
##	4.22	168	100	114
##	5.22	168	100	115
##	1.23	168	100	116
##	2.23	168	100	117
##	3.23	168	100	118

##	4.23	168	100	119
##	5.23	168	100	120
##	1.24	168	100	121
##	2.24	168	100	122
##	3.24	168	100	123
##	4.24	168	100	124
##	5.24	168	100	125
##	1.25	168	100	126
##	2.25	168	100	127
##	3.25	168	100	128
##	4.25	168	100	129
##	5.25	168	100	130
##	1.26	168	100	131
##	2.26	168	100	132
##	3.26	168	100	133
##	4.26	168	100	134
##	5.26	168	100	135
##	1.27	168	100	136
##	2.27	168	100	137
##	3.27	168	100	138
##	4.27	168	100	139
##	5.27	168	100	140
##	1.28	168	100	141
##	2.28	168	100	142
##	3.28	168	100	143
##	4.28	168	100	144
##	5.28	168	100	145
##	1.29	168	100	146
##	2.29	168	100	147
##	3.29	168	100	148
##	4.29	168	100	149
##	5.29	168	100	150
##	1.30	168	100	151
##	2.30	168	100	152
##	3.30	168	100	153
##	4.30	168	100	154
##	5.30	168	100	155
##	1.31	168	100	156
##	2.31	168	100	157

##	3.31	168	100	158
##	4.31	168	100	159
##	5.31	168	100	160
##	1.32	168	100	161
##	2.32	168	100	162
##	3.32	168	100	163
##	4.32	168	100	164
##	5.32	168	100	165
##	1.33	168	100	166
##	2.33	168	100	167
##	3.33	168	100	168
##	4.33	168	100	169
##	5.33	168	100	170
##	1.34	168	100	171
##	2.34	168	100	172
##	3.34	168	100	173
##	4.34	168	100	174
##	5.34	168	100	175
##	1.35	168	100	176
##	2.35	168	100	177
##	3.35	168	100	178
##	4.35	168	100	179
##	5.35	168	100	180
##	1.36	168	100	181
##	2.36	168	100	182
##	3.36	168	100	183
##	4.36	168	100	184
##	5.36	168	100	185
##	1.37	168	100	186
##	2.37	168	100	187
##	3.37	168	100	188
##	4.37	168	100	189
##	5.37	168	100	190
##	1.38	168	100	191
##	2.38	168	100	192
##	3.38	168	100	193
##	4.38	168	100	194
##	5.38	168	100	195



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 106).
```

```
## Incorporation applied (for group 107).
```

```
## Incorporation applied (for group 108).
```

```
## Incorporation applied (for group 109).
```

```
## Incorporation applied (for group 110).
```

```
## Incorporation applied (for group 111).
```

```
## Incorporation applied (for group 112).
```

```
## Incorporation applied (for group 113).
```

```
## Incorporation applied (for group 114).
```

```
## Incorporation applied (for group 115).
```

```
## Incorporation applied (for group 116).
```

```
## Incorporation applied (for group 117).
```

```
## Incorporation applied (for group 118).
```

```
## Incorporation applied (for group 119).
```

```
## Incorporation applied (for group 120).
```

```
## Incorporation applied (for group 136).
```

```
## Incorporation applied (for group 137).
```

```
## Incorporation applied (for group 138).
```

```
## Incorporation applied (for group 139).
```

```
## Incorporation applied (for group 140).
```

```
## Incorporation applied (for group 141).
```

## Incorporation applied (for group 142).  
## Incorporation applied (for group 143).  
## Incorporation applied (for group 144).  
## Incorporation applied (for group 145).  
## Incorporation applied (for group 146).  
## Incorporation applied (for group 147).  
## Incorporation applied (for group 148).  
## Incorporation applied (for group 149).  
## Incorporation applied (for group 150).  
## Incorporation applied (for group 166).  
## Incorporation applied (for group 167).  
## Incorporation applied (for group 168).  
## Incorporation applied (for group 169).  
## Incorporation applied (for group 170).  
## Incorporation applied (for group 171).  
## Incorporation applied (for group 172).  
## Incorporation applied (for group 173).  
## Incorporation applied (for group 174).  
## Incorporation applied (for group 175).  
## Incorporation applied (for group 176).  
## Incorporation applied (for group 177).  
## Incorporation applied (for group 178).  
## Incorporation applied (for group 179).  
## Incorporation applied (for group 180).  
## Incorporation applied (for group 76).  
## Incorporation applied (for group 77).

```

## Incorporation applied (for group 78).
## Incorporation applied (for group 79).
## Incorporation applied (for group 80).
## Incorporation applied (for group 81).
## Incorporation applied (for group 82).
## Incorporation applied (for group 83).
## Incorporation applied (for group 84).
## Incorporation applied (for group 85).
## Incorporation applied (for group 86).
## Incorporation applied (for group 87).
## Incorporation applied (for group 88).
## Incorporation applied (for group 89).
## Incorporation applied (for group 90).

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