Diets and PC ratios

All ratios

Without extreme ratios
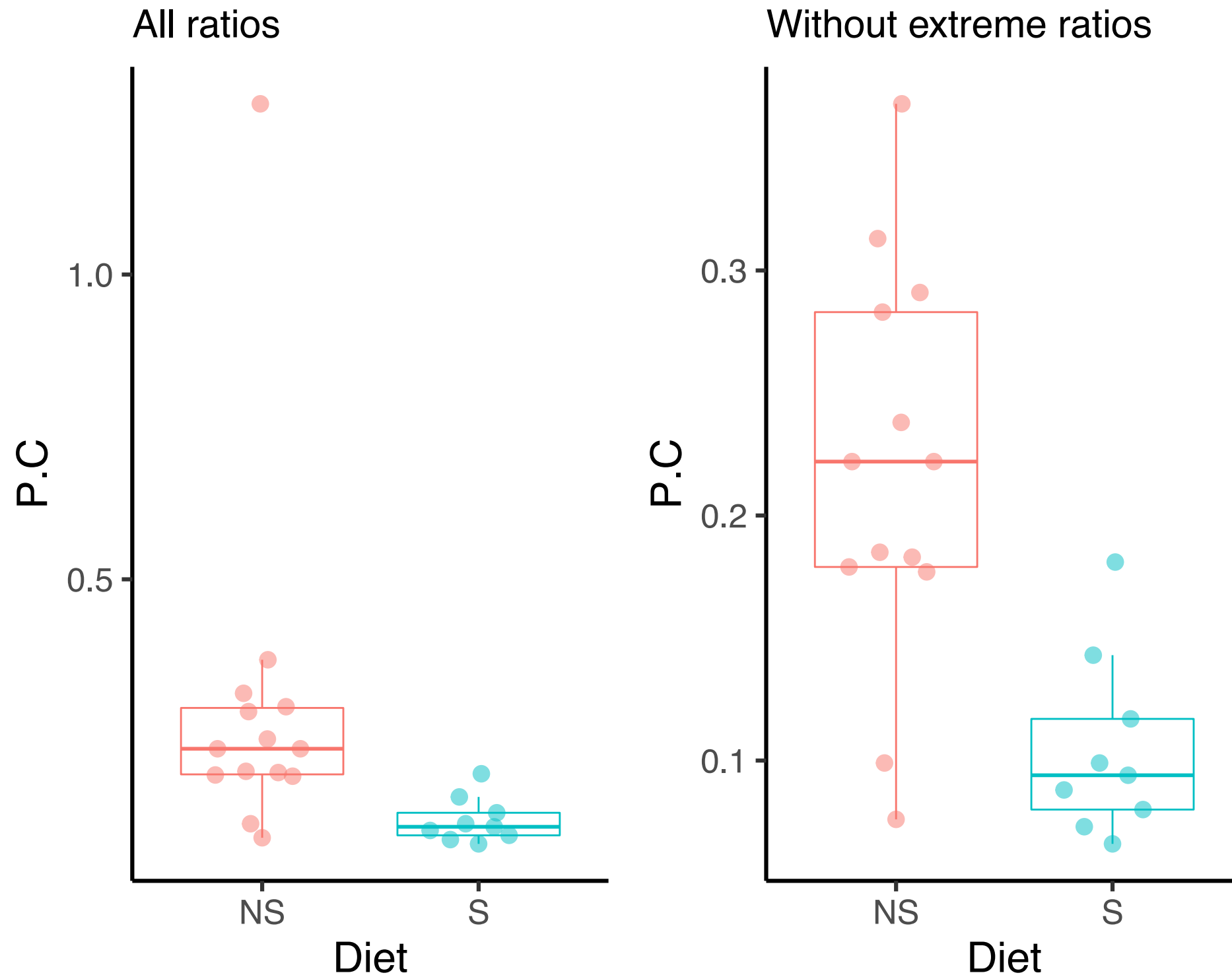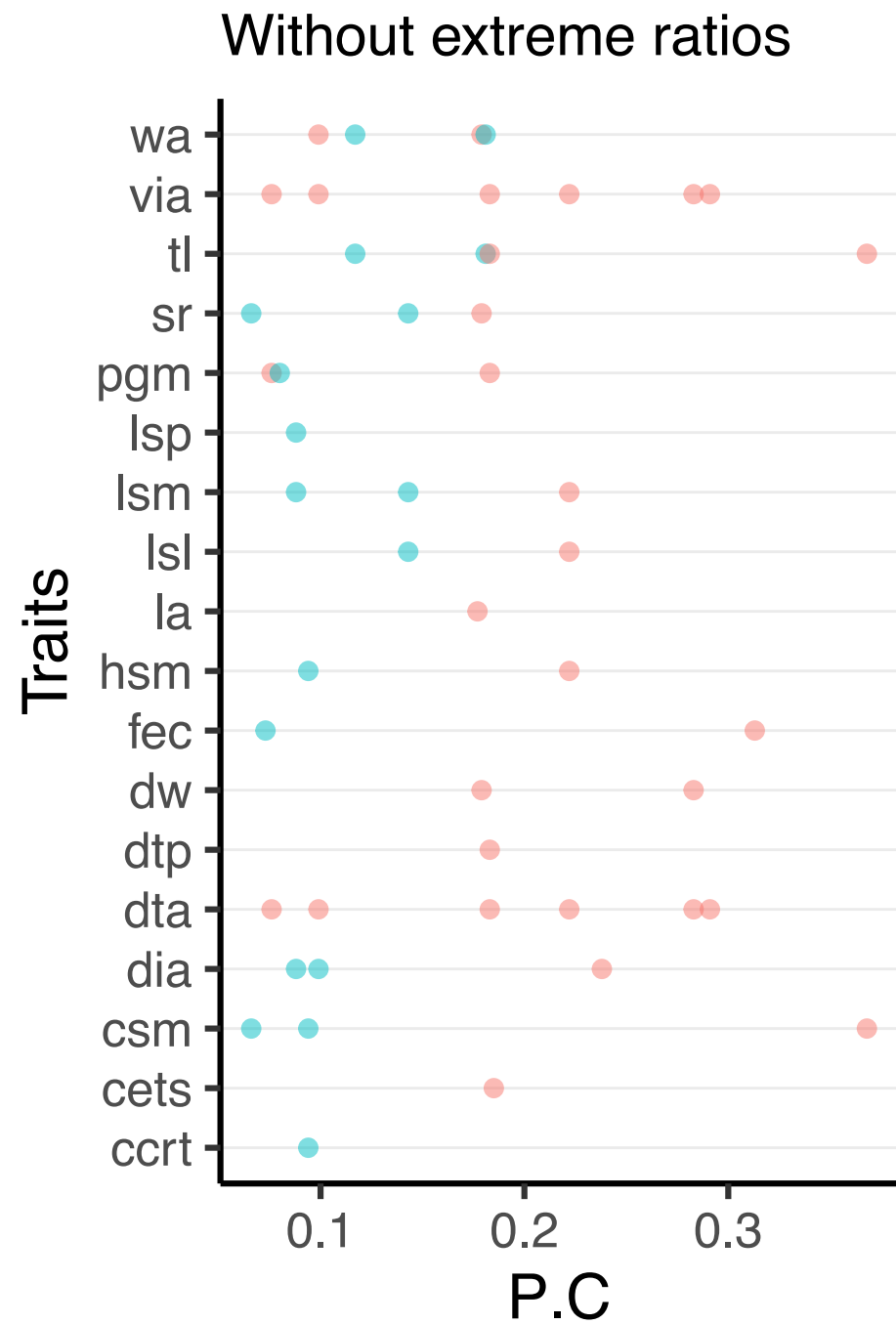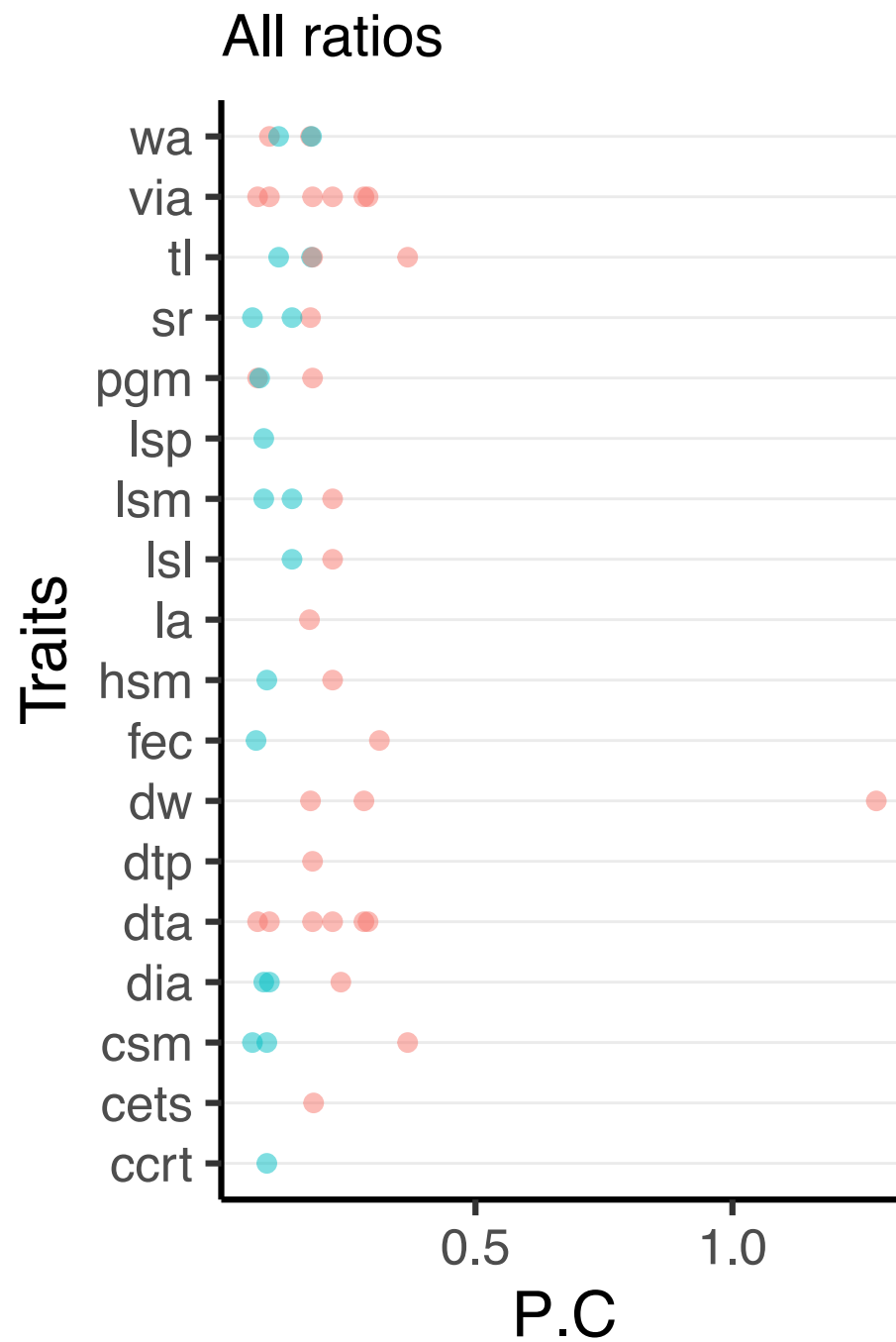
Diets and PC ratios

Line Random Effects

- For a given trait, for each lab, we have a linear mixed effect model:

  Trait ~ Pop + (1|Line:Pop) + (1|Batch) + (1|Rep:Line:Pop)

- Extraction of Line random effects, which are the deviations from the model intercept

```
> head(line_random_effects)
$CCRT_F_Vieira_lmer_pop
# A tibble: 168 × 8
    Model    Trait Lab    Sex  Population Line  Estimate    SE
    <chr>    <chr> <chr>  <chr> <chr>     <chr>    <dbl> <dbl>
 1 lmer_pop CCRT  Vieira F     AK         AK1      145.  126.
 2 lmer_pop CCRT  Vieira F     AK         AK10    -128.  126.
 3 lmer_pop CCRT  Vieira F     AK         AK11    -38.9  125.
 4 lmer_pop CCRT  Vieira F     AK         AK12    -158.  126.
 5 lmer_pop CCRT  Vieira F     AK         AK13    -104.  130.
 6 lmer_pop CCRT  Vieira F     AK         AK14     177.  125.
 7 lmer_pop CCRT  Vieira F     AK         AK15     157.  136.
 8 lmer_pop CCRT  Vieira F     AK         AK16    -161.  126.
 9 lmer_pop CCRT  Vieira F     AK         AK17    -68.3  126.
10 lmer_pop CCRT  Vieira F     AK         AK18    -221.  125.
# … with 158 more rows

$CCRT_F_Mensch_lmer_pop
# A tibble: 166 × 8
    Model    Trait Lab    Sex  Population Line  Estimate    SE
    <chr>    <chr> <chr>  <chr> <chr>     <chr>    <dbl> <dbl>
 1 lmer_pop CCRT  Mensch F     AK         AK1      198.  172.
 2 lmer_pop CCRT  Mensch F     AK         AK10    -272.  172.
 3 lmer_pop CCRT  Mensch F     AK         AK11    -77.3  171.
 4 lmer_pop CCRT  Mensch F     AK         AK12    -139.  171.
 5 lmer_pop CCRT  Mensch F     AK         AK13    -80.2  172.
 6 lmer_pop CCRT  Mensch F     AK         AK14    -52.3  180.
 7 lmer_pop CCRT  Mensch F     AK         AK15    -75.1  172.
 8 lmer_pop CCRT  Mensch F     AK         AK16    -4.96  180.
 9 lmer_pop CCRT  Mensch F     AK         AK17     173.  179.
10 lmer_pop CCRT  Mensch F     AK         AK18     499.  179.
# … with 156 more rows
```

- Available as .rds or .csv file

- Can be used to compute H

LinearModelsPop/all_models_line_random_effects_list.rds

LinearModelsPop/all_models_line_random_effects.csv

Code/031_linear_models_pop_lines_estimates.R

Compound Line Random Effects

- Meta subgroup analysis using Line random effects and SE

```
> names(compound_line_estimates)
 [1] "CCRT_lmers_line_compound_random_effects"
 [2] "CSM_lmers_line_compound_random_effects"
 [3] "DT_lmers_line_compound_random_effects"
 [4] "Dia_glmers_line_compound_random_effects"
 [5] "DW_lmers_line_compound_random_effects"
 [6] "Fec_lmers_line_compound_random_effects"
 [7] "HSM_lmers_line_compound_random_effects"
 [8] "LS_lmers_line_compound_random_effects"
 [9] "LA_lmers_line_compound_random_effects"
[10] "Pgm_lmers_line_compound_random_effects"
[11] "SR_lmers_line_compound_random_effects"
[12] "TL_lmers_line_compound_random_effects"
[13] "Via_lmers_line_compound_random_effects"
[14] "WA_lmers_line_compound_random_effects"
```

```
$TL_lmers_line_compound_random_effects
  Trait Population Line Sex      Value        SE       LLM       ULM N_lab
1  TL          YE YE11   F -10.816928 15.334328 -40.87166 19.237802     2
2  TL          YE YE13   F -20.726401  7.153683 -34.74736 -6.705440     3
3  TL          YE YE14   F   5.477799  8.243586 -10.67933 21.634930     4
4  TL          YE YE15   F  12.239491 14.620498 -16.41616 40.895140     2
5  TL          YE YE19   F  -9.779857  6.102303 -21.74015  2.180437     4
6  TL          YE YE20   F -10.487864 24.074131 -57.67229 36.696567     2

$Via_lmers_line_compound_random_effects
  Trait Population Line Sex       Value         SE           LLM         ULM N_lab
1  Via         YE YE11  NA -0.19596069 0.06784032 -0.328925286 -0.06299610     4
2  Via         YE YE13  NA  0.09203542 0.04853051 -0.003082638  0.18715347     4
3  Via         YE YE14  NA  0.07527087 0.05299681 -0.028600957  0.17914270     4
4  Via         YE YE15  NA  0.04933949 0.02984901 -0.009163493  0.10784247     4
5  Via         YE YE19  NA  0.08953395 0.02984901  0.031030963  0.14803693     4
6  Via         YE YE20  NA -0.09798811 0.03159802 -0.159919102 -0.03605712     4

$WA_lmers_line_compound_random_effects
  Trait Population Line Sex      Value       SE        LLM       ULM N_lab
1 WA_L         YE YE11   F  46.640000 55.86200  -62.84751 156.12751     1
2 WA_L         YE YE13   F  17.143930 26.49719  -34.78960  69.07746     3
3 WA_L         YE YE14   F -65.873089 18.73525 -102.59350 -29.15268     4
4 WA_L         YE YE15   F  57.879528 11.83451   34.68432  81.07474     3
5 WA_L         YE YE19   F  16.404288 30.05408  -42.50062  75.30920     3
6 WA_L         YE YE20   F   5.933351 26.91392  -46.81697  58.68367     2
```

- Available as .rds

LinearModelsPop/all_models_line_compound_random_effects_list.rds

Code/041_meta_analyses_pop_lines_estimates.R

Compound Line Random Effects

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Population	Line	CCRT_F	CCRT_M	CSM_F	CSM_M	DT_P_NA	DT_A_F	DT_A_M	Dia_F	DW_F	DW_M	Fec_F	HSM_F
2	YE	YE11	53.0641854	72.9789158	0.05398182	0.01776748	8.883	8.3701117	8.09428207	-0.9533221	-0.042	-0.0306563	-2.8254114	-50.5147
3	YE	YE13	148.676957	-39.93508	0.07860655	-0.0103264	-3.037	1.56313746	-0.5259658	-0.4981122	-0.001708	0.00803846	3.60735162	18.2401
4	YE	YE14	15.6207099	-42.595593	-0.1762043	-0.1441712	-7.534	-0.6058377	-3.6920659	-0.1247468	-0.0186139	0	-0.2043627	2.9
5	YE	YE15	-288.70045	-57.757253	0.05929856	0.13886894	-1.067	-2.0532984	-2.170096	-0.2597218	-0.0042393	0.00315913	4.56993762	11.20597
6	YE	YE19	-198.69035	29.5239598	0.04949772	0.08558157	12.518	-5.5970928	-3.4554175	0.94520264	-0.0284268	-0.033	-1.1682558	29.83674
7	YE	YE20	-102.90266	-23.984809	0.04596698	-0.0658653	-1.316	-1.7886742	-2.6900389	0.18867529	-0.0026667	-0.0071106	-23.40982	-30.3
8	YE	YE21	48.2800635	-64.89814	-0.0470011	-0.1089041	0.202	1.16729184	0.52338386	-0.1636767	0.03070251	-0.0035354	-24.909913	35.87852
9	YE	YE22	83.6421647	-0.8205234	0.08738479	0.07690667	-13.606	-2.4141112	-0.1849657	0.12276955	-0.0131377	-0.0118071	15.8060897	-26.34284
10	YE	YE23	87.3341173	274.171235	-0.0802169	0.1458	2.115	-1.1894572	1.50668375	0.16785239	0.00583611	-0.0146292	11.020823	-29.418
11	YE	YE24	-136.88193	-99.528443	-0.1400098	-0.189171	-9.356	5.32960458	4.73465054	-0.1190572	0.00866667	0.01282016	27.3555912	16.37775
12	YE	YE26	-78.126182	-97.621155	0.02700852	0.00295856	9.047	1.69803206	5.32576731	-0.1636074	-0.0117233	0.00176088	-19.472386	1.77585
13	YE	YE27	-173.93107	24.9297106	-0.0721138	-0.03708	4.284	-1.045399	-3.4439305	0.20313225	0.02611005	0.03386138	-10.472459	-29.99
14	YE	YE33	97.7926068	0.88354981	-0.0222047	0.02022423	16.15	3.73381983	6.18720133	0.87577443	0.05467667	0.00829923	5.58438918	-14.46803
15	YE	YE40	64.9200364	-1.2625743	-0.0820241	0.10842055	-10.227	-2.87909	-4.4437307	-1.2835315	-0.0207186	-0.0027331	45.0746945	-35.30602
16	YE	YE41	9.781	22.92	0.16697696	0.05755854	-4.091	-1.960327	-0.2094857	0.13477785	-0.0123667	-0.0024679	-11.450277	6.5
17	YE	YE48	156.901856	25.0694627	-0.0587706	-0.0284596	-3.676	1.40569602	3.69569341	-1.0725051	-0.0429447	-0.0125564	7.31828572	-5.39283
18	YE	YE49	128.013007	48.5204115	0.02915708	0.00740161	-2.471	-2.5166647	-0.407535	0.77342569	-0.0149433	-0.0008178	-29.092	32.2
19	YE	YE51	254.758162	71.8889339	-9.17E-05	0.01748085	1.391	-4.9520747	-6.3939605	-0.3689207	0.00626432	-0.0008271	-2.9656271	15.68835
20	YE	YE69	3.70658263	1.754	0.11426693	0.09327664	-1.583	2.42815581	2.57665363	-0.739334	0.01378905	0.02132661	-3.4697875	22.72714
21	YE	YE80	-147.41489	-100.72081	0.01824337	-0.1241227	3.374	-0.276535	-1.4919007	-0.5782927	0.04930835	0.02020336	14.0243256	12.74098
22	RE	RE1	-96.537	-123.9	0.01588604	0.000729	NA	-6.2353994	-5.9829962	NA	0.021	0.009	-13.007045	NA
23	RE	RE10	41.4385426	-62.569208	-0.0032159	0.05996171	10.717	2.80451621	0.87457786	-0.2845651	-0.0156825	0.01058738	2.14995514	-77.0803
24	RE	RE11	120.181485	-4.095284	0.00447688	0.01092585	8.18	4.35189108	3.80403237	-0.3031735	-0.0180085	-0.0064085	28.8959006	16.2172
25	RE	RE12	30.2156548	-4.2415373	0.03995015	0.02879053	-13.904	-5.6211701	-4.7589123	-0.6681261	0.00578348	-0.0143056	-30.91737	-10.8524
26	RE	RE13	37.839339	24.4019613	0.09053915	0.01273667	13.994	8.47089953	3.76488042	0.27137021	0.03641121	0.02516279	-10.931523	-6.96920
27	RE	RE15	231.615324	56.3762043	0.11494904	0.02687225	-15.446	-5.5663528	-1.6147629	-0.3832038	-0.0342206	-0.0146348	-11.848426	-48.62738
28	RE	RE16	-47.792937	70.2061649	0.09262797	-0.0191542	3.599	-2.475154	-2.8004292	-0.2825327	0.01458879	-0.002651	35.0934074	-43.27069
29	RE	RE17	91.3989809	49.3930501	-0.1282585	-0.1198548	28.181	5.45979315	7.25860731	-1.0800662	-0.0163848	-0.0080918	-10.662635	4.671961
30	RE	RE18	-149.04413	11.0149956	0.08979294	0.08913415	-2.112	-2.4876575	-3.4962342	0.08240425	-0.0042944	-0.0191399	-12.412359	15.78522
31	RE	RE2	-93.56999	-3.2499653	0.03666688	-0.0243381	-4.32	1.89842401	4.80103665	0.1228182	0.06088632	0.03434021	6.32320028	29.14148
32	RE	RE3	79.5621509	0.8273904	0.09505845	0.11506018	12.57	1.3303730	0.25311261	0.02006511	0.00834528	0.00374	26.125535	24.6339

LinearModelsPop/all_models_line_compound_random_effects.csv

Code/041_meta_analyses_pop_lines_estimates.R