Mazurka paper figures

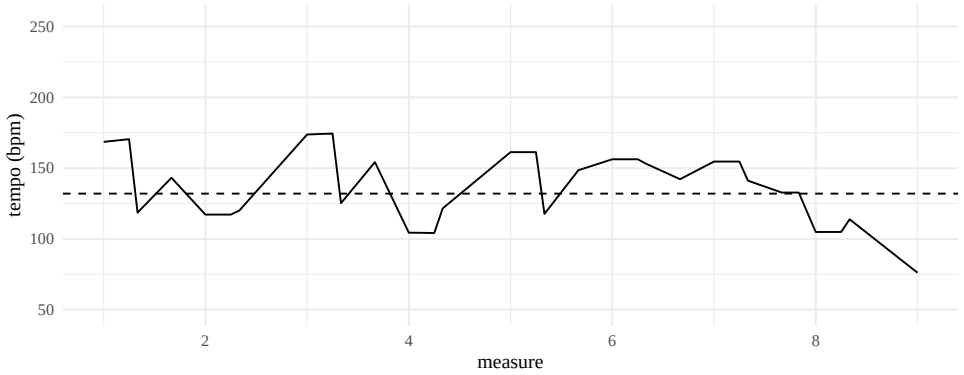
DJM

2/22/2019

Suggested order

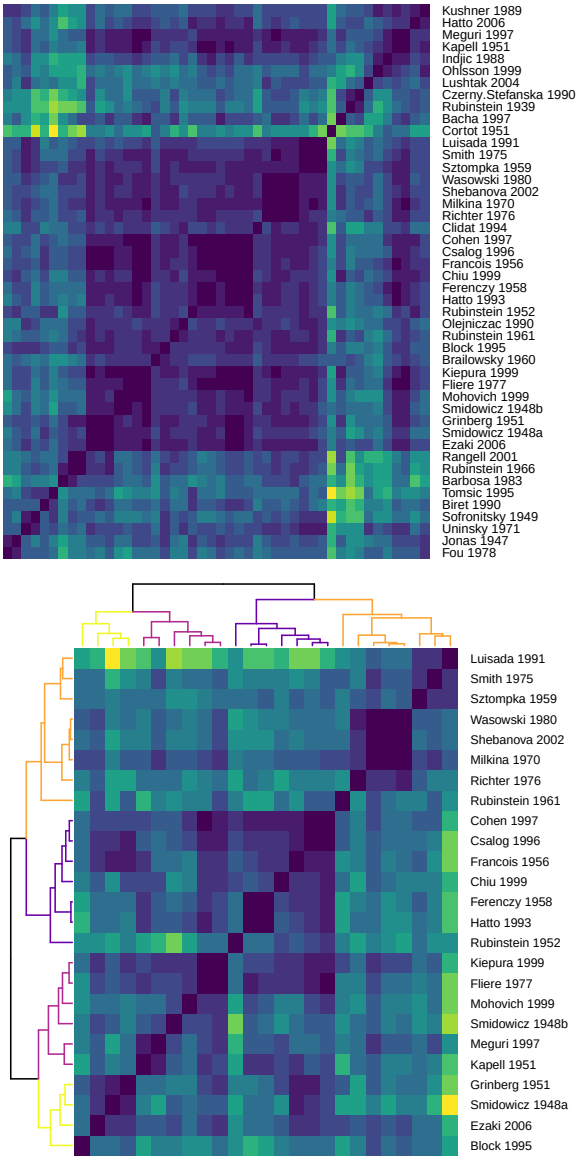
1. Parameter interpretation in Fliere
2. Using parameters to examine two different performances
3. Clustering performances (compare the clusters)
    a. what can we say about the parameters of each cluster? what is different about them?
4. Similar performances (Rubinstein)
5. Model issues

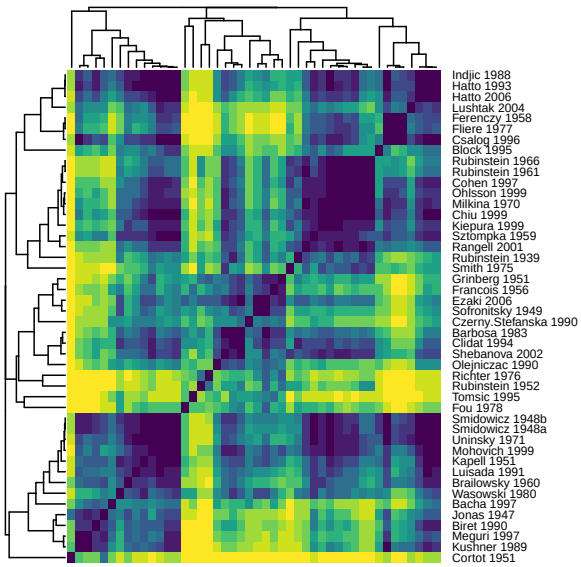
Short tempo



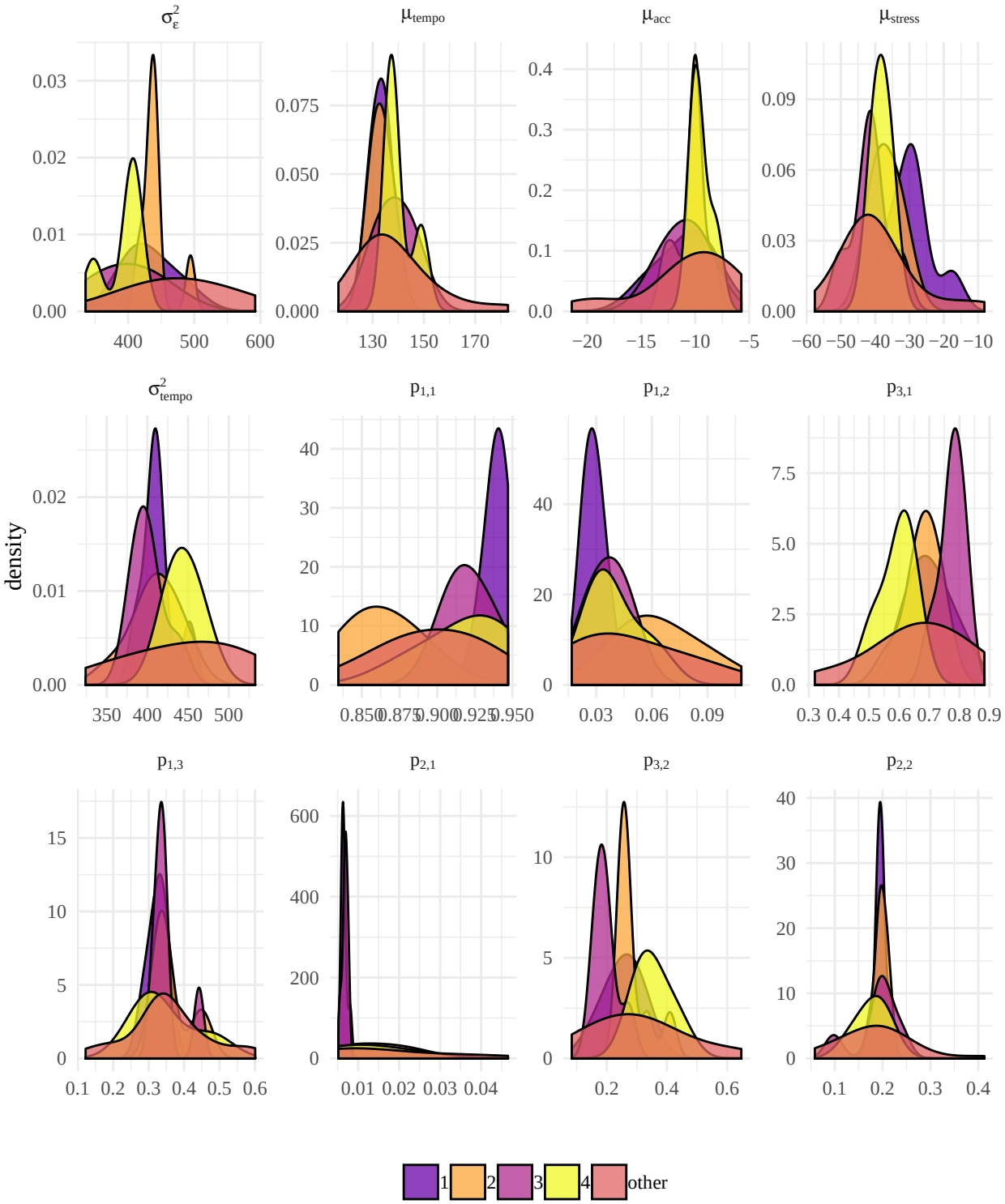
Comparing clusters

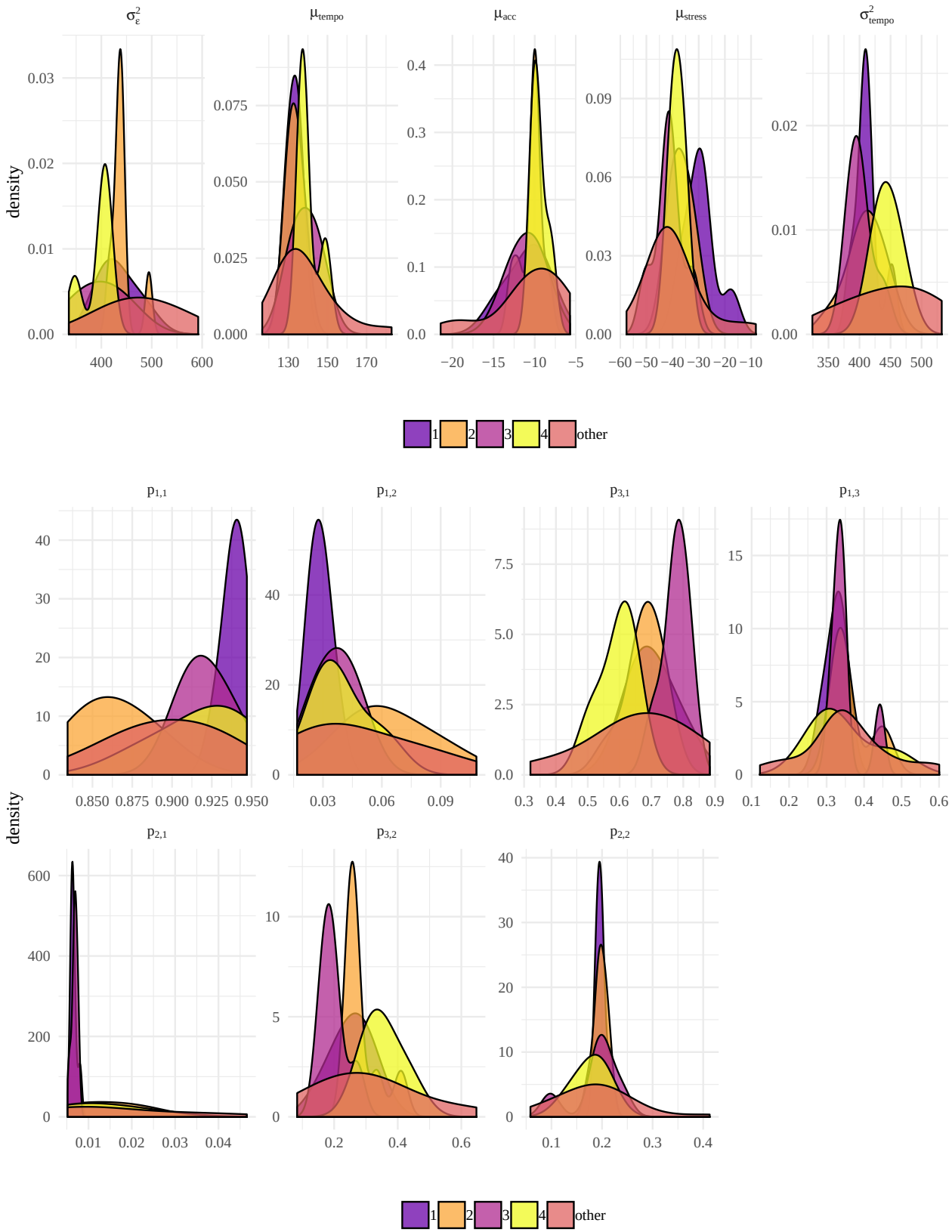
```
## [1] FALSE
## [1] FALSE
## [1] FALSE
## [1] FALSE
## [1] FALSE
## [1] TRUE
## [1] TRUE
## [1] TRUE
## [1] 8
```


Kushner 1989
Hatto 2006
Meguri 1997
Kapell 1951
Indjic 1988
Ohlsson 1999
Lushtak 2004
Czerny.Stefanska 1990
Rubinstein 1939
Bacha 1997
Cortot 1951
Luisada 1991
Smith 1975
Sztompka 1959
Wasowski 1980
Shebanova 2002
Milkina 1970
Richter 1976
Clidat 1994
Cohen 1997
Csalog 1996
Francois 1956
Chiu 1999
Ferenczy 1958
Hatto 1993
Rubinstein 1952
Olejniczac 1990
Rubinstein 1961
Block 1995
Brailowsky 1960
Kiepura 1999
Fliere 1977
Mohovich 1999
Smidowicz 1948b
Grinberg 1951
Smidowicz 1948a
Ezaki 2006
Rangell 2001
Rubinstein 1966
Barbosa 1983
Tomsic 1995
Biret 1990
Sofronitsky 1949
Uninsky 1971
Jonas 1947
Fou 1978
Luisada 1991
Smith 1975
Sztompka 1959
Wasowski 1980
Shebanova 2002
Milkina 1970
Richter 1976
Rubinstein 1961
Cohen 1997
Csalog 1996
Francois 1956
Chiu 1999
Ferenczy 1958
Hatto 1993
Rubinstein 1952
Kiepura 1999
Fliere 1977
Mohovich 1999
Smidowicz 1948b
Meguri 1997
Kapell 1951
Grinberg 1951
Smidowicz 1948a
Ezaki 2006
Block 1995

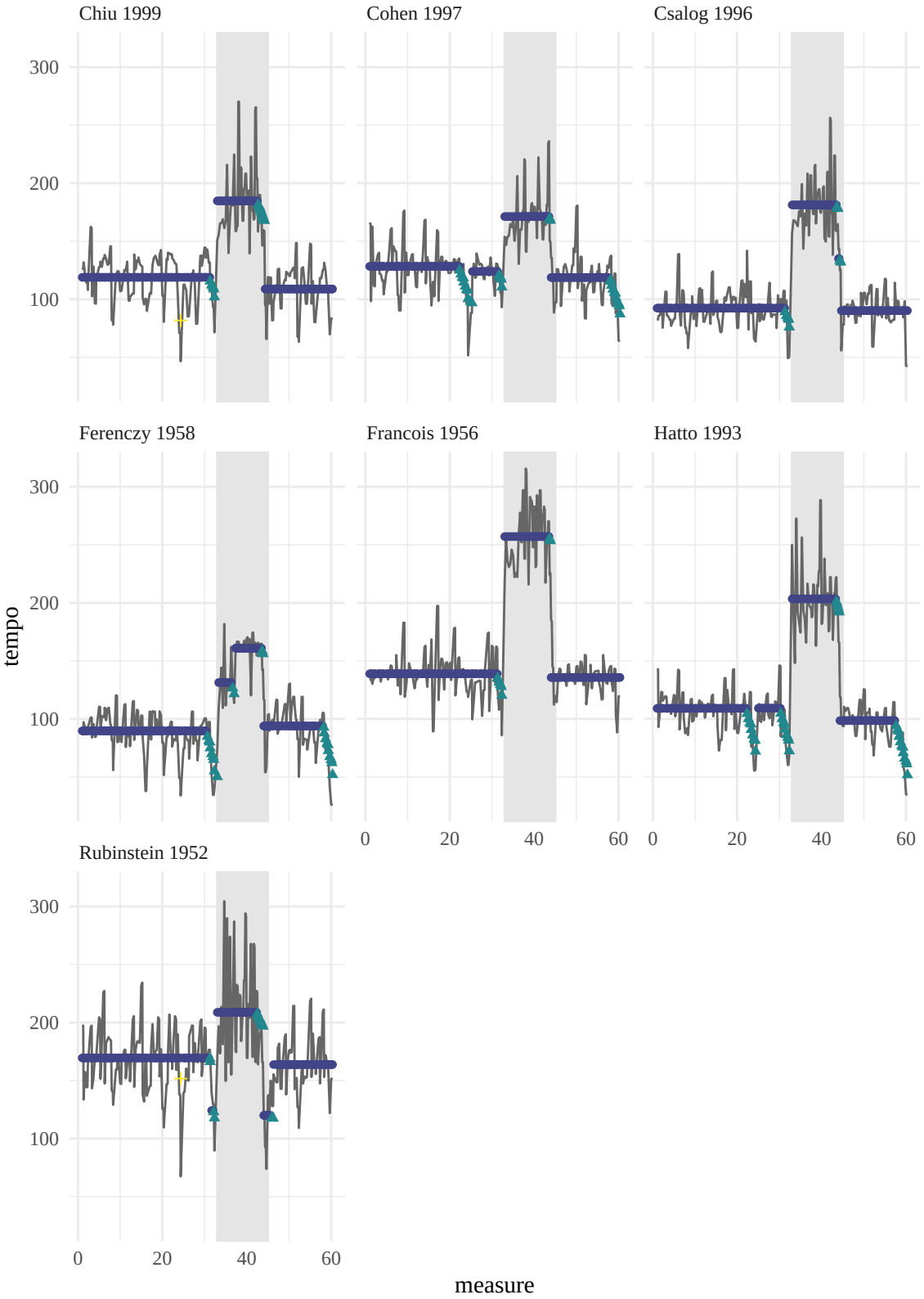

Indjic 1988
Hatto 1993
Hatto 2006
Lushtak 2004
Ferenczy 1958
Fliere 1977
Csalog 1996
Block 1995
Rubinstein 1966
Rubinstein 1961
Cohen 1997
Ohlsson 1999
Milkina 1970
Chiu 1999
Kiepura 1999
Sztompka 1959
Rangell 2001
Rubinstein 1939
Smith 1975
Grinberg 1951
Francois 1956
Ezaki 2006
Sofronitsky 1949
Czerny.Stefanska 1990
Barbosa 1983
Clidat 1994
Shebanova 2002
Olejniczac 1990
Richter 1976
Rubinstein 1952
Tomsic 1995
Fou 1978
Smidowicz 1948b
Smidowicz 1948a
Uninsky 1971
Mohovich 1999
Kapell 1951
Luisada 1991
Brailowsky 1960
Wasowski 1980
Bacha 1997
Jonas 1947
Biret 1990
Meguri 1997
Kushner 1989
Cortot 1951

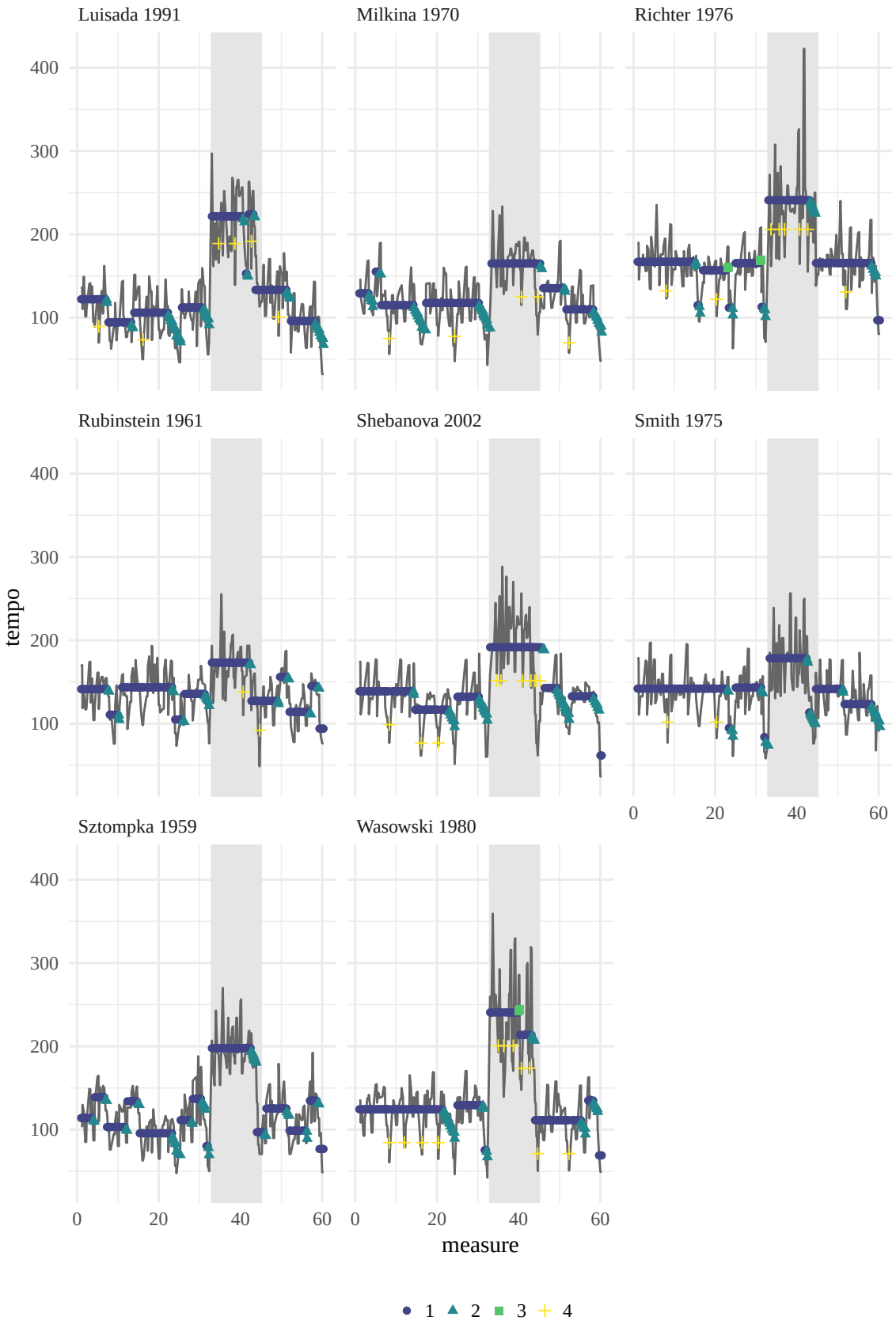
Cluster densities

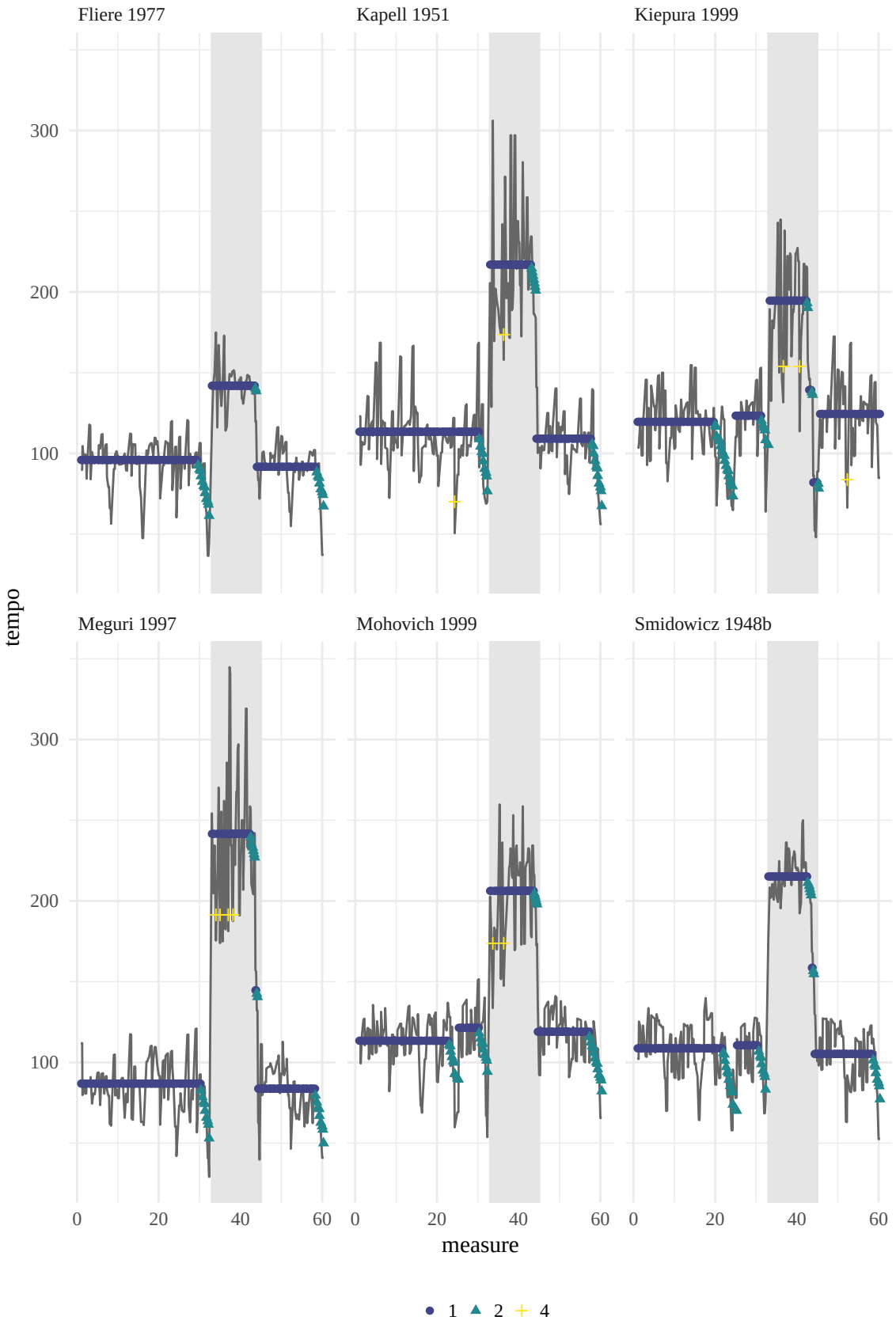


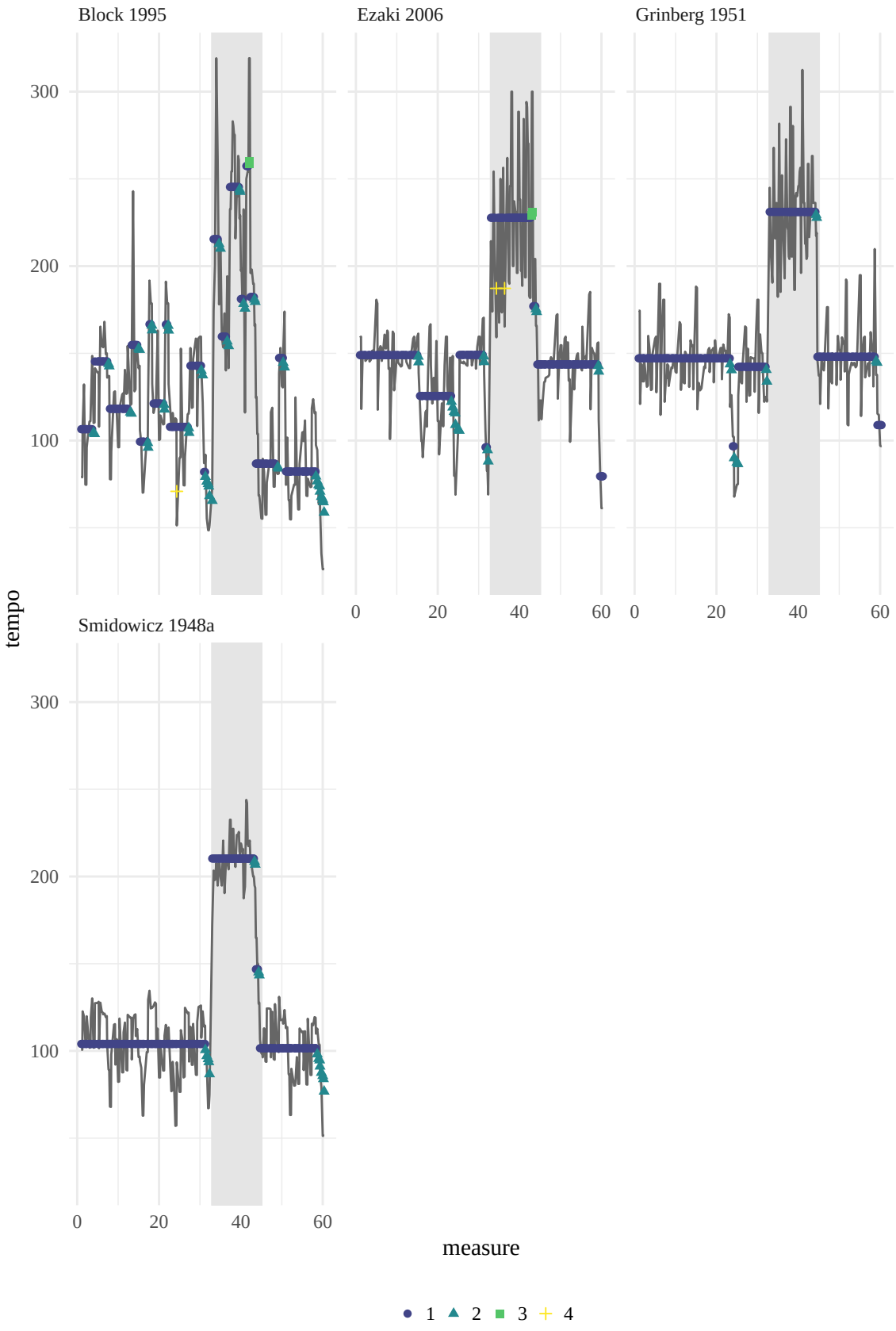

σ²ε
μtempo
μacc
μstress
σ²tempo
density
1
2
3
4
other
p1,1
p1,2
p3,1
p1,3
p2,1
p3,2
p2,2

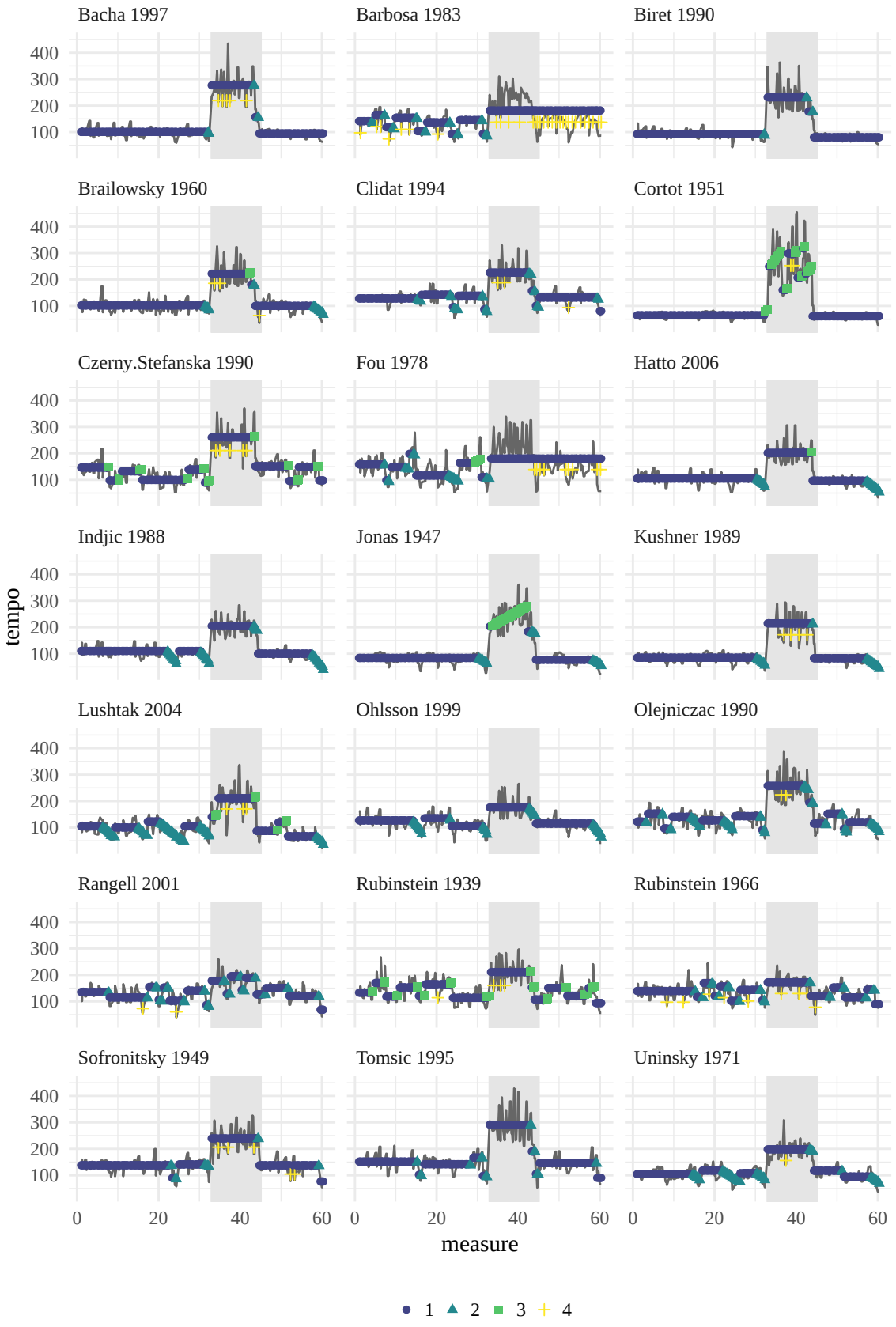
Plotting performances

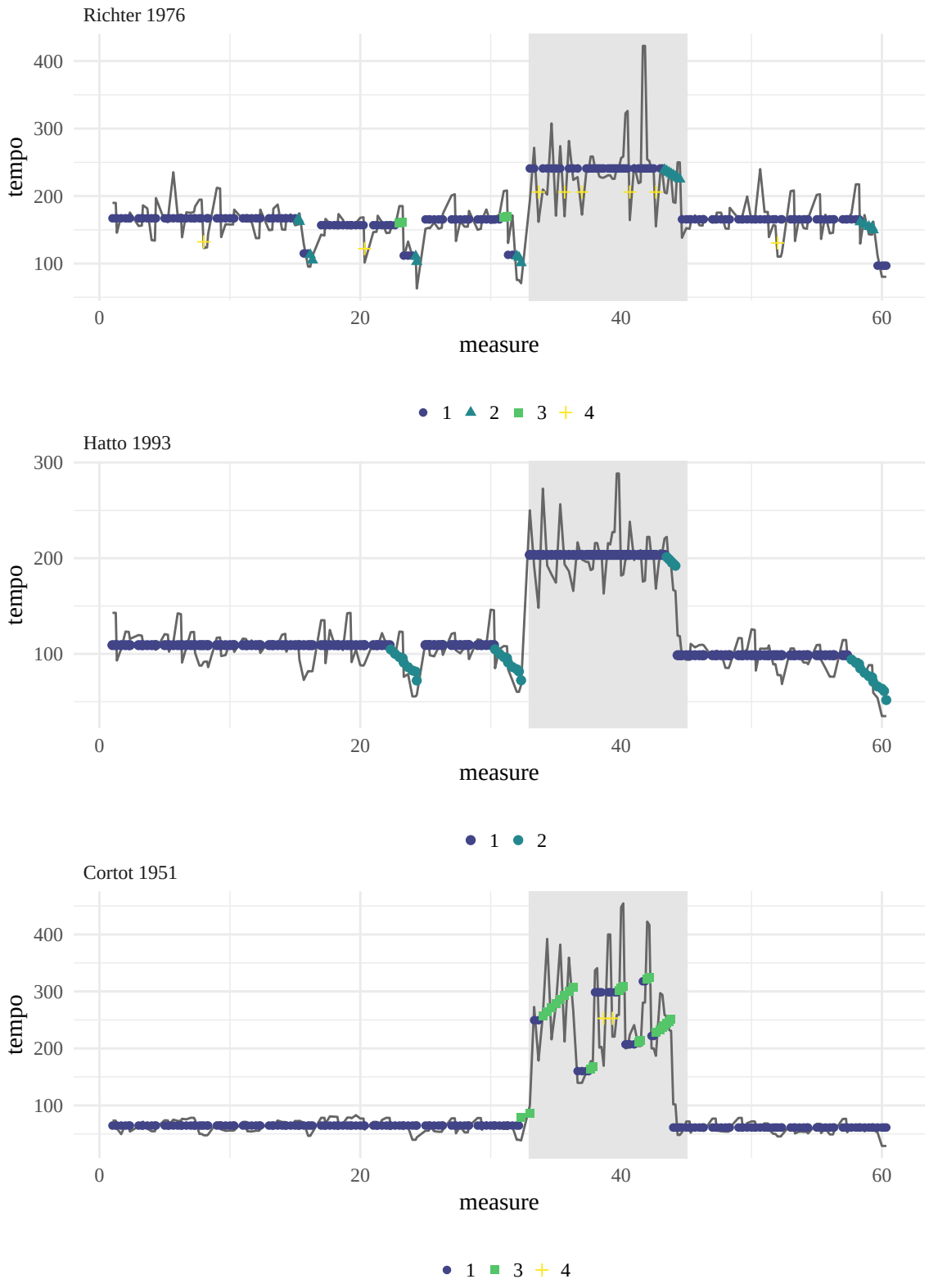


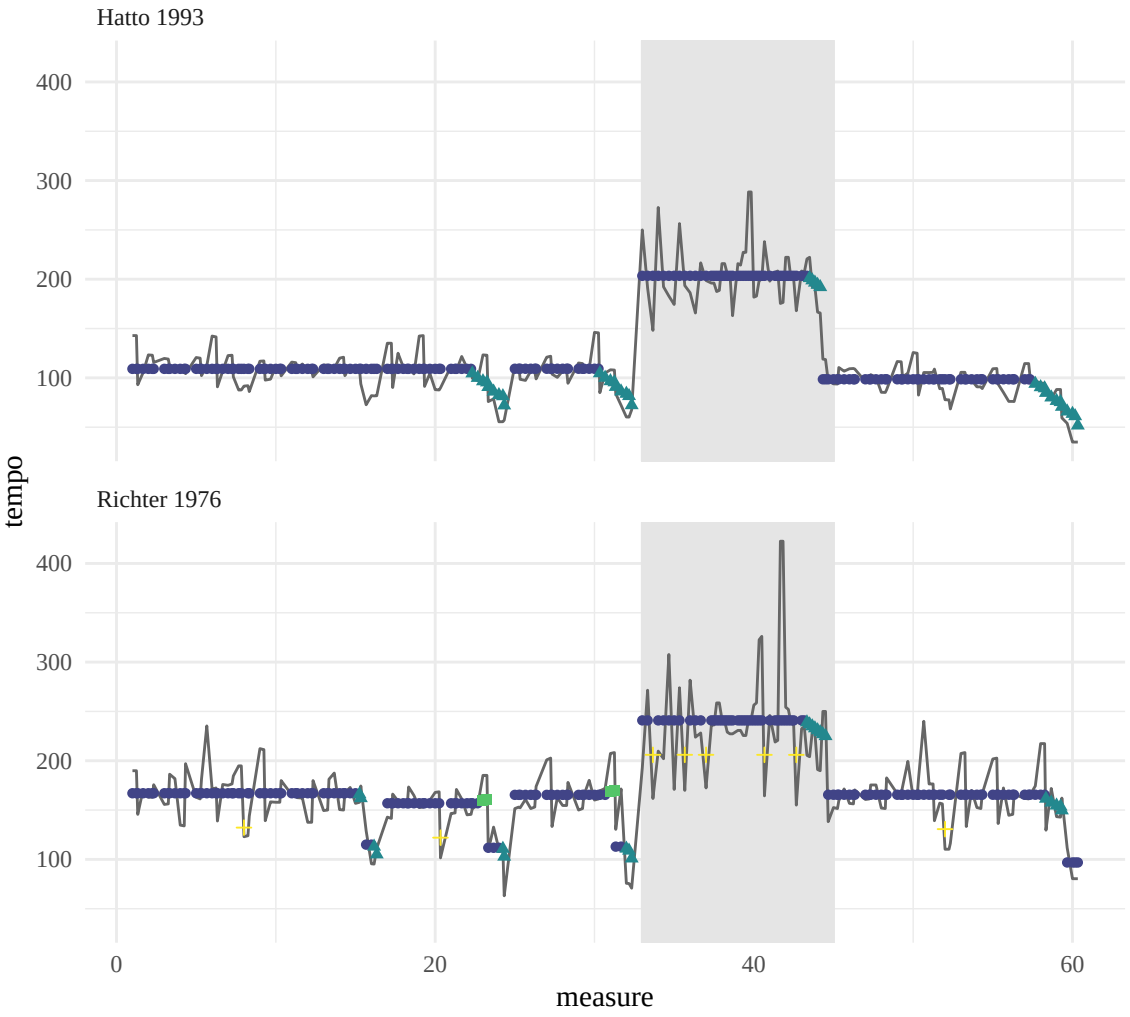

Luisada 1991
Milkina 1970
Richter 1976
Rubinstein 1961
Shebanova 2002
Smith 1975
Sztompka 1959
Wasowski 1980
tempo
measure
400
300
200
100
0
20
40
60
1
2
3
4


Fliere 1977
Kapell 1951
Kiepura 1999
Meguri 1997
Mohovich 1999
Smidowicz 1948b
tempo
300
200
100
0
20
40
60
measure
1
2
4


Block 1995
Ezaki 2006
Grinberg 1951
Smidowicz 1948a
tempo
300
200
100
0
20
40
60
measure
1
2
3
4


Bacha 1997
Barbosa 1983
Biret 1990
Brailowsky 1960
Clidat 1994
Cortot 1951
Czerny.Stefanska 1990
Fou 1978
Hatto 2006
Indjic 1988
Jonas 1947
Kushner 1989
Lushtak 2004
Ohlsson 1999
Olejniczac 1990
Rangell 2001
Rubinstein 1939
Rubinstein 1966
Sofronitsky 1949
Tomsic 1995
Uninsky 1971
tempo
400
300
200
100
0
20
40
60
measure
1
2
3
4

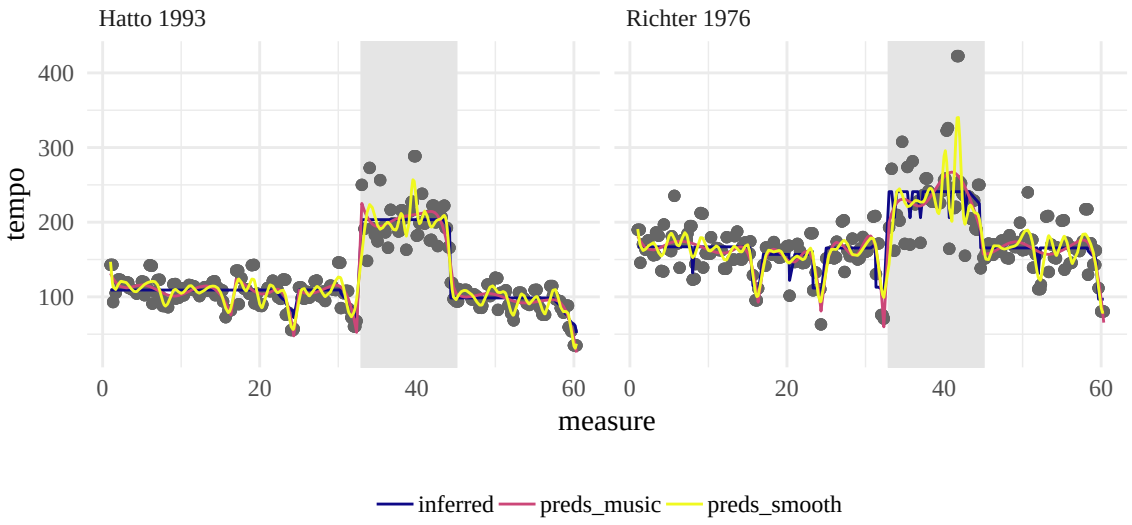

Richter 1976
tempo
400
300
200
100
0
20
40
60
measure
1 2 3 4
Hatto 1993
tempo
300
200
100
0
20
40
60
measure
1 2
Cortot 1951
tempo
400
300
200
100
0
20
40
60
measure
1 3 4



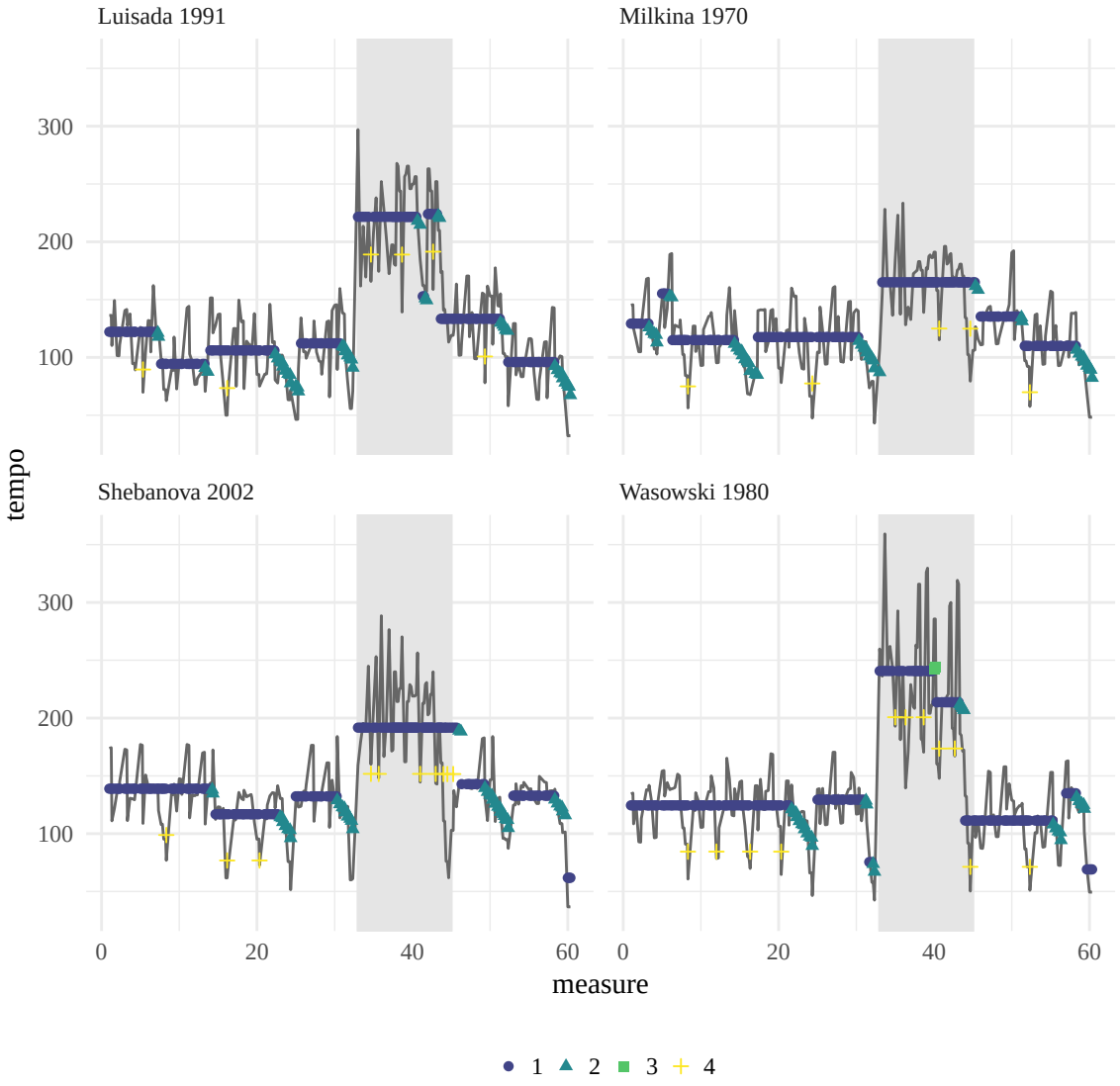
	sig2eps	mu1	mu2	mu3	sig2tempo	p11	p12	p22	p31	p13	p21	p32
Richter 1976	426.70	136.33	-11.84	-34.82	439.38	0.85	0.05	0.74	0.44	0.02	0.25	0.17
Hatto 1993	405.57	130.36	-13.57	-27.93	408.99	0.94	0.03	0.82	0.36	0.01	0.16	0.19
Cortot 1951	403.71	182.84	-21.43	-45.67	460.82	0.92	0.02	0.71	0.34	0.03	0.23	0.09

Different smoothing

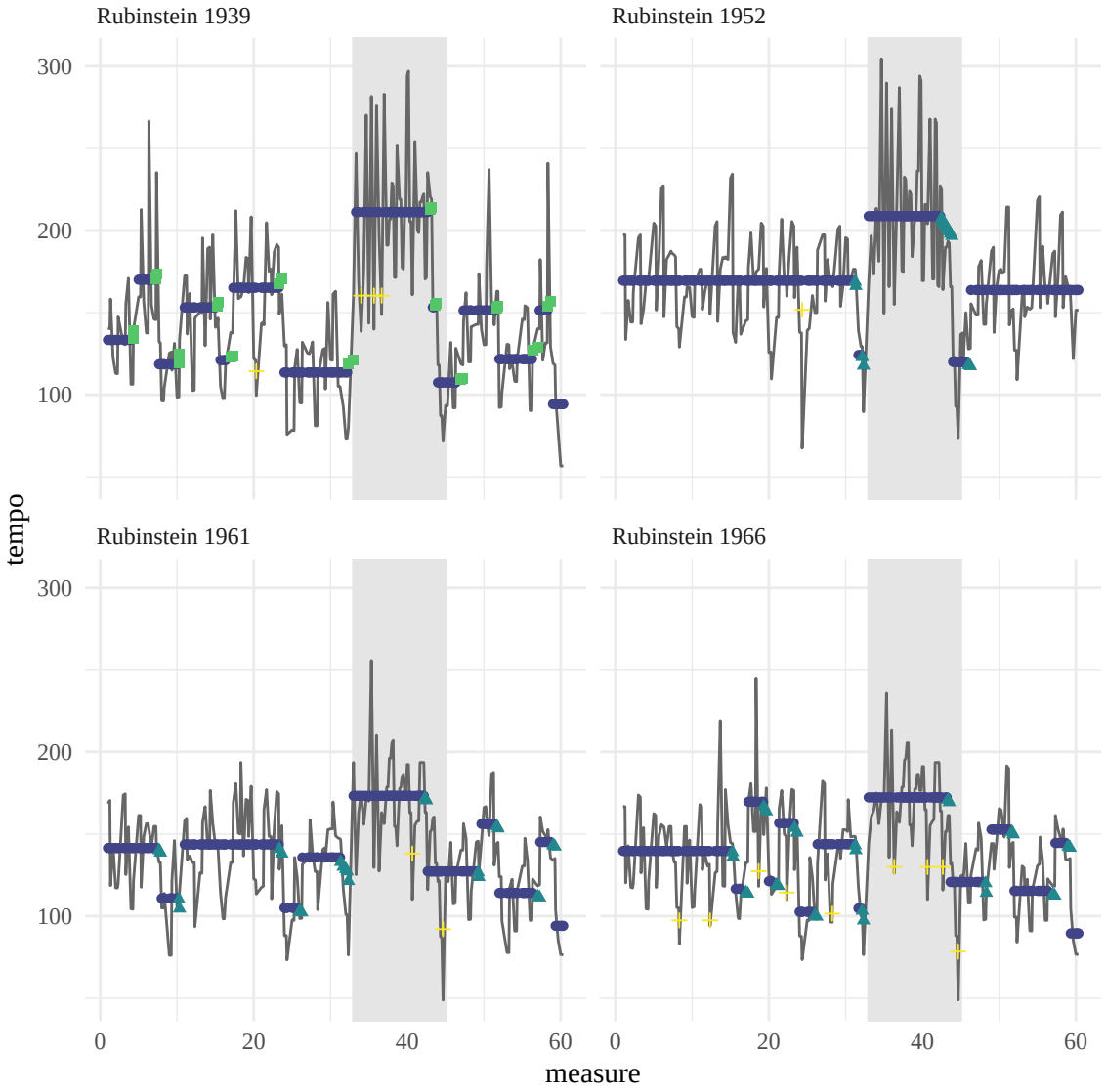
Try splines, replicating knots, l1tf?


Hatto 1993
Richter 1976
tempo
400
300
200
100
0
20
40
60
measure
inferred
preds_music
preds_smooth

Similar performances

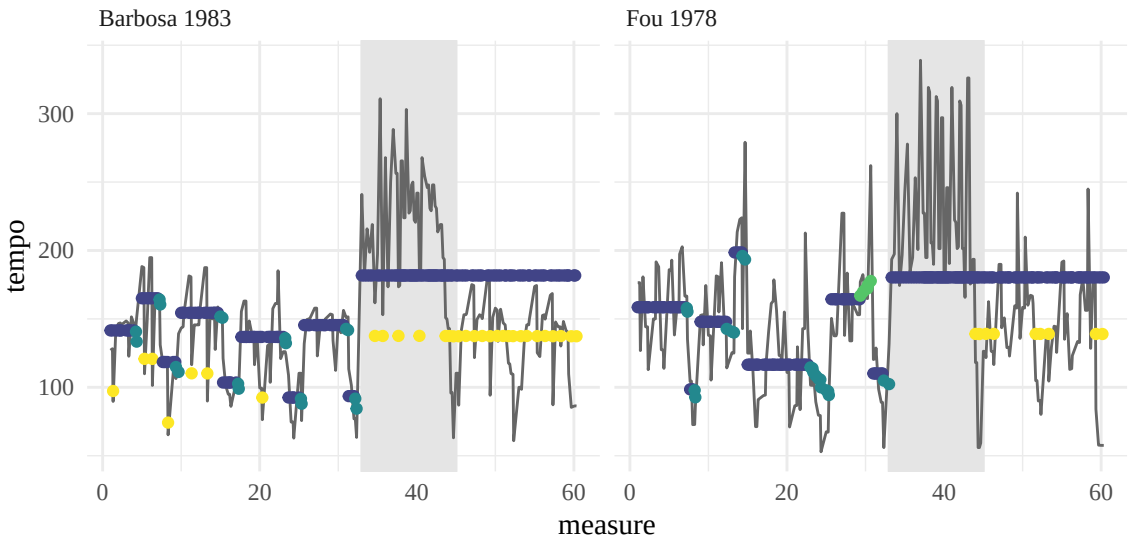


Rubinstein contrast



	sig2eps	mu1	mu2	mu3	sig2tempo	p11	p12	p22	p31	p13	p21	p32
Wasowski 1980	414.99	132.00	-10.00	-40.00	425.00	0.85	0.05	0.67	0.34	0.02	0.26	0.20
Shebanova 2002	439.98	132.00	-10.00	-40.00	400.02	0.85	0.05	0.67	0.33	0.02	0.27	0.20
Luisada 1991	494.33	127.80	-10.24	-32.56	411.63	0.84	0.10	0.71	0.35	0.01	0.26	0.19
Milkina 1970	435.25	136.38	-9.68	-40.02	400.01	0.87	0.05	0.68	0.33	0.02	0.26	0.21
Rubinstein 1939	520.32	145.26	-7.89	-50.82	345.64	0.89	0.02	0.83	0.56	0.05	0.13	0.16
Rubinstein 1952	481.13	128.13	-7.76	-17.59	409.30	0.93	0.04	0.68	0.32	0.01	0.28	0.19
Rubinstein 1961	434.23	139.17	-8.34	-35.08	355.00	0.90	0.06	0.56	0.46	0.01	0.41	0.19
Rubinstein 1966	380.95	127.24	-8.80	-42.28	473.69	0.87	0.07	0.36	0.34	0.01	0.61	0.20

Bad estimation



Problems with the model

- Problem with retransitioning to state 1
- states 2 and 3 aren't constrained to always decrease/increase, only in mean
- state 4 may not always emphasize a slow down
- previous 2 have to do with Gaussian assumptions
- necessity for strong priors
- but priors are on parameters, not on path (how would we want this to change?)