MUP comments

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Outline

- **Broad remarks**
- Nitty gritty remarks
- Interesting results
- Conclusions

Broad remarks

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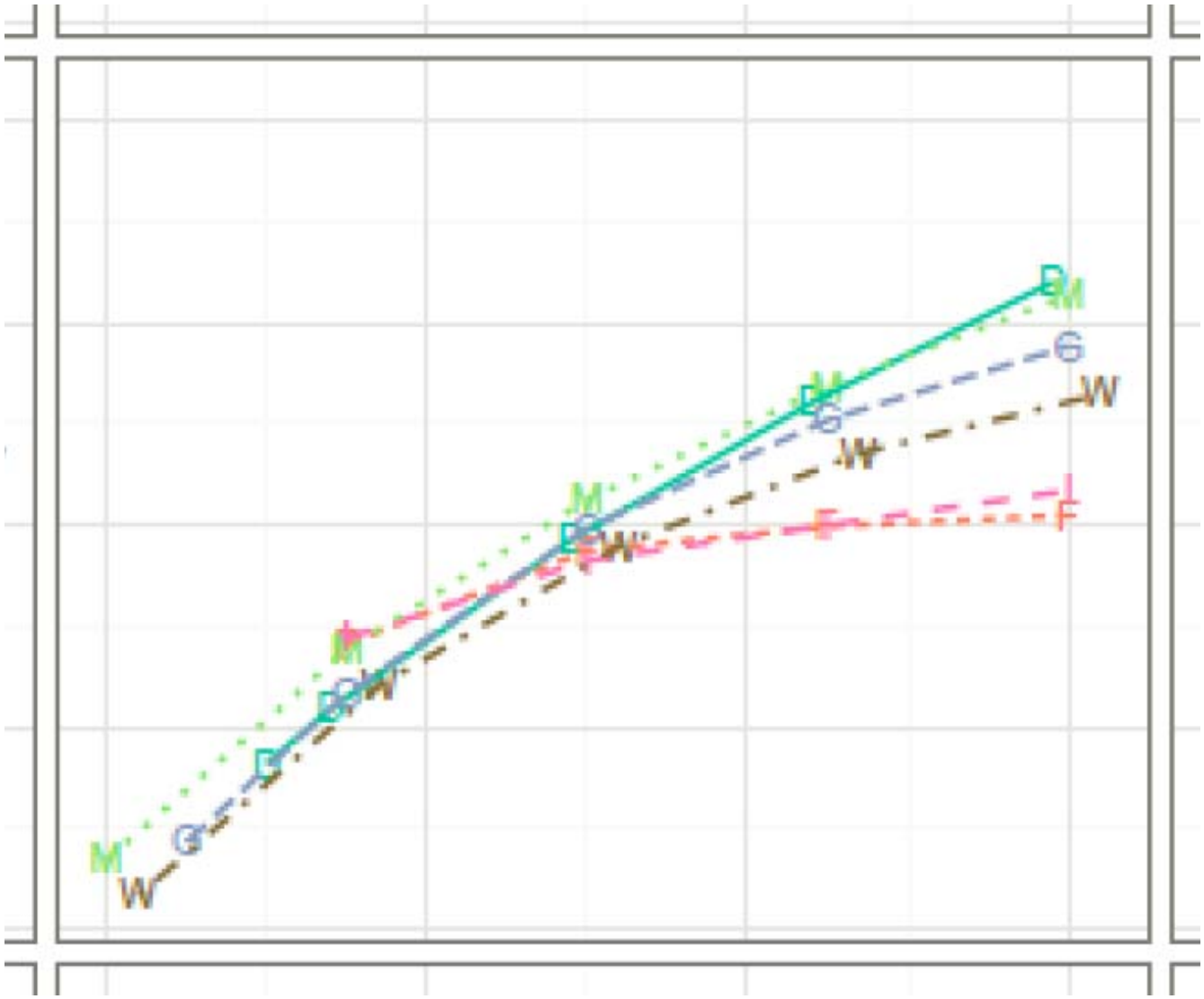
Nitty gritty remarks

- Are we the first study of this kind in the universe of all climate models, or “just” the economic climate models?
  → Verify, maybe add a word in the abstract
- Which models changed other parameters with the ECS?
  → Add a table somewhere
  → I’d be curios whether there is a relation between the results and that choice



Group

- DICE
- FUND
- GCAM
- IGSM
- MERGE
- WITCH

Nitty gritty remarks

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  → I’d be curios whether there is a relation between the results and that choice
- How do we report that we have enough Monte Carlo runs?
  →Report standard errors
- Author order → I would prefer two groups, not three
- To what extend will we share code, data etc.?
- Would like to see more graphs relative to tables

Fat tails

- Are we certain that a fat tail in one of the original models would show up in the SRF?
- To what extend is simply the choice of the functional form of the SRF determining things?

  → Do a diagnostic run with DICE or FUND, where we use the same joint pdf as in the project, and then estimate the tail index for the model output
- Maybe discuss why having the variance is important, i.e. why having just a mean is not enough
- Add the tail index for the SCC

Why do the TFP coefficients vary between models? Is that an indication that the protocol was not implemented properly?

log Output, 2100								
	TSC	TSC	TFP	TFP	Pop	Pop	1-R2	1-R2
	L	LQI	L	LQI	L	LQI	L	LQI
DICE	-0.0411	-0.0371	81.16	81.51	84.95	85.34	0.0018	0.0001
FUND	-0.0016	-0.0023	88.06	88.05	89.72	89.71	0.0000	0.0000
GCAM	0.0000	0.0000	86.74	86.74	88.96	88.96	0.0000	0.0000
IGSM	0.0000	0.0000	89.27	89.27	66.61	66.61	0.0035	0.0002
MERGE	0.0000	0.0000	89.21	89.21	78.44	78.44	0.0006	0.0000
WITCH	0.0000	0.0000	89.64	89.64	85.70	85.70	0.0001	0.0000

Does it make sense to only discuss the linear terms? Shouldn't we also talk about the gammas?

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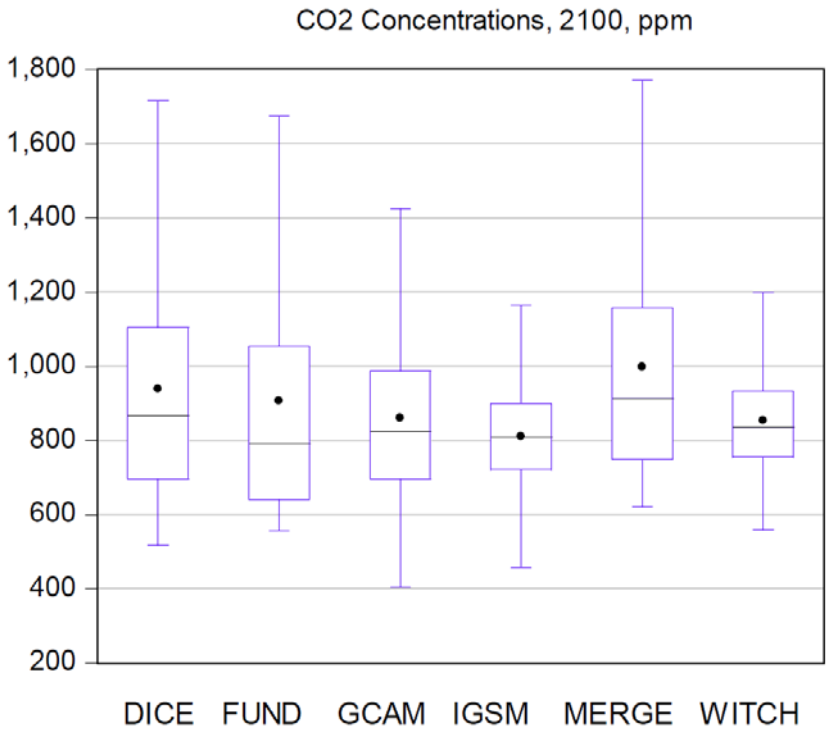
Interesting results

- I really like (well…) the results that ensembles underestimate the uncertainties
- Important result: SCC depends on model, not parametric uncertainty
  - → Give more prominence in text



There seems to be a right skew in the distribution for concentrations, something I have never seen/heard mentioned anywhere. Should we highlight that?

Interesting results

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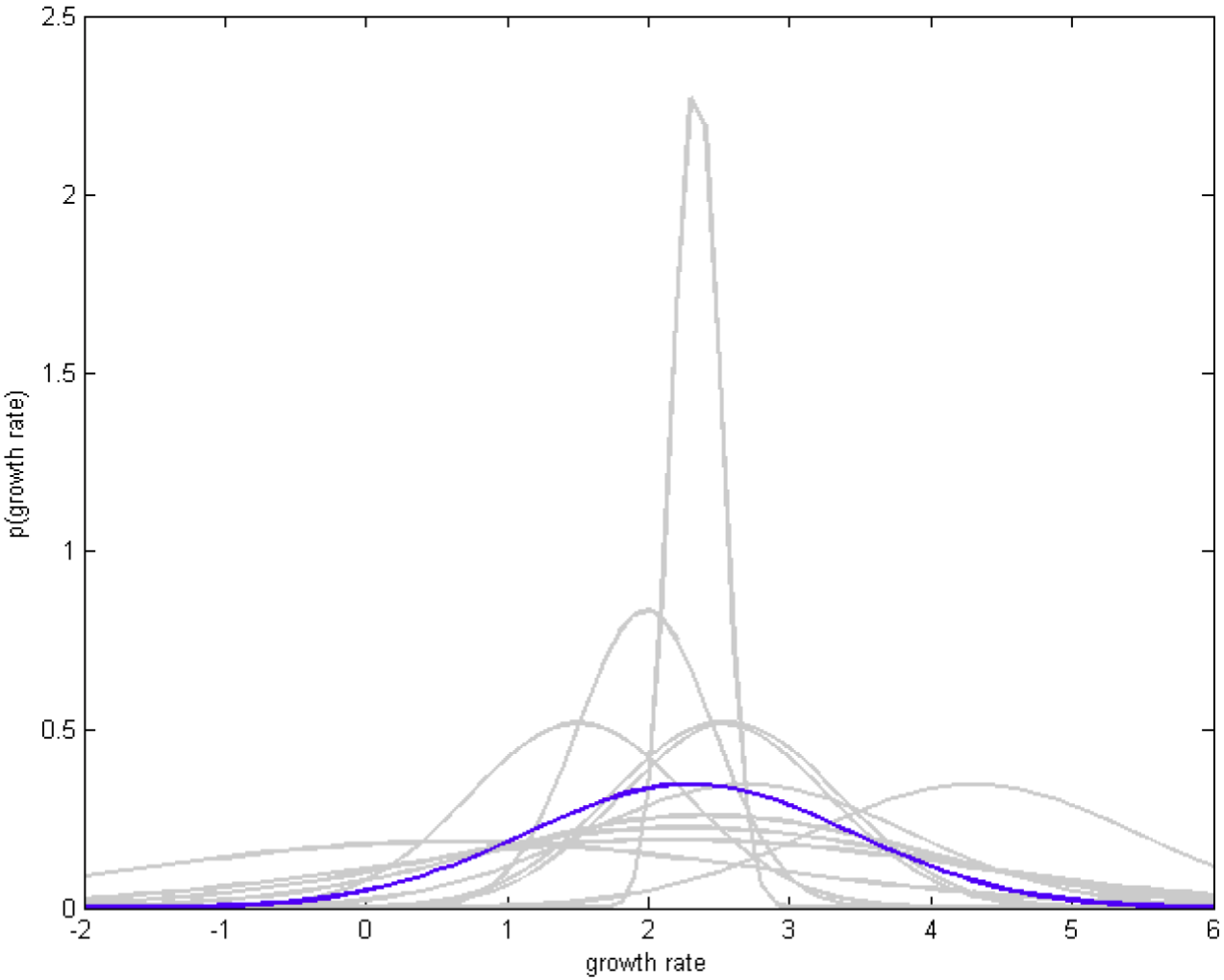
- Important result: SCC depends on model, not parametric uncertainty
- The TFP survey is really fascinating, and in my mind stands out almost as a separate paper



Who are the experts?

Experts more certain than historical record

Interesting results

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- The TFP survey is really fascinating, and in my mind stands out almost as a separate paper
- Emphasis on TFP uncertainty, maybe at some point it will stick…

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Conclusions

- Should I now update FUND with some of the pdfs in the study?
  → Will models converge?
- Especially on the temperature output, it would be cool to see how things would change for something like SNEASY (not for this paper, obviously)
- How will some of these results feed back into things like how we think about scenarios?
- Is this a one-off exercise or is there more to be done?

Thank you!

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