|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **13.** | **Bayesian Uncertainty Analysis for Complex Computer Codes** (Jeremy’s Thesis) | Oakley (1999) |  |  |
|  | <https://drive.google.com/file/d/1MIWrCeEaaBEcIQ_C5u-JA5CdNrxewF13/view> |  |  |
|  | Have a look at p.32 (section 2.3). |  |  |
| **12.** | **Identifying climate model structural inconsistencies allows for tight constraint of aerosol radiative forcing** | Regayre et al. (2023) |  | **Leeds’ work on history matching…** |
|  | <https://doi.org/10.5194/acp-23-8749-2023> |  |
|  | Leighton's most recent article that focuses a little more towards structural deficiencies, provided the motivation behind our current Aerosol-MFR project. |  |
| **11.** | **The value of remote marine aerosol measurements for constraining radiative forcing uncertainty** | Regayre et al. (2020) |  |
|  | <https://doi.org/10.5194/acp-20-10063-2020> |  |
|  | Extension to Johnson (2020) by Leighton (Leeds) in 2020 that brought in some further observations over the Southern Ocean. |  |
| **10.** | **Robust observational constraint of uncertain aerosol processes and emissions in a climate model and the effect on aerosol radiative forcing** | Johnson et al. (2020) | **Base papers on using this approach with the global aerosol-climate model** |
|  | <https://acp.copernicus.org/articles/20/9491/2020> |
|  | The 2018 paper was followed up by a study published in 2020 that brought together an extensive set of real observations to use for comparison. |
| **9.** | **The importance of comprehensive parameter sampling and multiple observations for robust constraint of aerosol radiative forcing** | Johnson et al. (2018) |
|  | <https://acp.copernicus.org/articles/18/13031/2018> |
|  | Jill’s work at Leeds on model-observation comparison / history matching with the global aerosol-climate model started with this synthetic study in 2018. |
| **8.** | **The impact of structural error on parameter constraint in a climate model** | McNeall et al. (2016) |  | **A good starting place for gaining an understanding of the methodology/theory of the history matching approach...** |
|  | <https://esd.copernicus.org/articles/7/917/2016> |  |
|  | Doug also published another study in 2016 that looked at how structural error can impact history matching with a climate/land-surface application. |  |
| **7.** | **The potential of an observational data set for calibration of a computationally expensive computer model** | McNeall et al. (2013) |  |
|  | <https://gmd.copernicus.org/articles/6/1715/2013> |  |
|  | Doug applied this technique to an Ice-sheet model. I think this one also discusses the difference between calibration and history matching a little (as Jeremy was explaining today), with the main procedure applied seeming to be history matching. |  |
| **6.** | **History matching for exploring and reducing climate model parameter space using observations and a large perturbed physics ensemble** | Williamson et al. (2013) |  |
|  | <https://link.springer.com/article/10.1007/s00382-013-1896-4> |  |
|  | The first climate-based application |  |
| **5.** | **Pressure matching for hydrocarbon reservoirs: a case in the use of Bayes linear strategies for large computer experiments (and discussion)** | Craig et al. (1997) |  |
|  | <https://durham-repository.worktribe.com/output/1692089> |  |
|  | The approach itself was first detailed in book chapters by researchers at Durham (e.g. Craig et al, 1997) on their work wrt Oil reservoirs - everyone cites these, but they are rather theoretical and complicated, and so I'd leave them alone for now (definitely don't start with these!) as I don't think they are very accessible. |  |
| **-** | **Bayesian History Matching of Complex Infectious Disease Models Using Emulation: A Tutorial and a Case Study on HIV in Uganda** | Andrianakis et al. (2015) |  |  |
|  | [https://journals.plos.org/ploscompbiol/article/file?id=10.1371/journal.pcbi.1003968](https://journals.plos.org/ploscompbiol/article/file?id=10.1371/journal.pcbi.1003968&type=printable) |  |  |  |
|  | History matching tutorial |  |  |  |
| **4.** | **Emulation of a complex global aerosol model to quantify sensitivity to uncertain parameters** | Lee et al. (2011) |  | **On emulation…** |
|  | <https://acp.copernicus.org/articles/11/12253/2011/acp-11-12253-2011.html> |  |
|  | To start you thinking again about the UQ framework on computer models, and the ordering of the processes involved (Fig 1). |  |
| **3.** | **Modelling with Deterministic Computer Models** | Oakley (2009) |  | **On model calibration…** |
| <https://drive.google.com/file/d/1CVpNgW5L59KFt6eKG9apoovg9xel27Fc> |  |  |
| Tutorial chapter on computer models. |  |  |
| **2.** | **Bayesian calibration of computer models** | Kennedy, O’Hagan (2001) |  |
| <https://rss.onlinelibrary.wiley.com/doi/abs/10.1111/1467-9868.00294> |  |
| Background theory paper (don't worry about all the technical detail!). |  |
| **1.** | **Learning about physical parameters: the importance of model discrepancy** | Brynjarsdóttir, OʼHagan (2014) |  |
| <https://iopscience.iop.org/article/10.1088/0266-5611/30/11/114007> |  |
| Paper with examples to replicate. See efficiency\_example.Rmd. |  |