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# Comparison of Earth system models in large multi-model ensembles

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For effective comparison of Earth system models in large multi-model ensembles one must first have an understanding of the model design, accurate knowledge of the requirements of experiments and insight into how forcing constraints are implemented.
Earth system modelling involves many roles, from those involving model construction, to those involving devising, executing, and exploiting numerical experiments. In most cases these roles involve multiple people, and in many cases these people are in different institutions and may only interact via published information (whether journal papers, technical notes, or websites). These multiple people, sources and methodologies lead to scope for misinterpretation of intent and misunderstanding of what was actually done.
We present the ES-DOC documentation methodology and information sharing ecosystem which allows the Earth system modelling community to accurately document and share information about both the design of their models and also about how their models are configured to conform to common forcing protocols.
We describe how ES-DOC concepts have been applied to the design phase of CMIP6, improving not only the documentation of CMIP6, but also improving the experiments themselves. As a consequence we believe it will be easier for both the MIP designers and participants to be confident that they have requested, understood and/or executed what was required.