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Est modus in rebus: analytical properties of multi-model ensembles

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Abstract. In this paper we investigate some basic properties of the multi-model ensemble systems, which can be deduced from a general characteristic of statistical distributions of the ensemble members with the help of mathematical tools. In particular we show how to find optimal linear combination of model results, which minimizes the mean square error both in the case of uncorrelated and correlated models. By proving basic estimations we try to deduce general properties describing multi-model ensemble systems. We show also how mathematical formalism can be used for investigation of the characteristics of such systems.

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