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José M Ponciano* (josemi@uf1.edu), Biology Department, PO Box 118525, Gainesville, FL 32511, and **Mark L Taper**. *Model projections in model space: Multimodel inference beyond model averaging*. Preliminary report.

Information criteria have had a profound impact on modern science. They allow researchers to estimate which of a set of model is closest to the generating process. Unfortunately, information criterion comparison does not tell how good the best model is. Nor does practitioners fully test the reliability (e.g. error rates) of model selection using information criteria. In this work, I show that these two shortcomings can be resolved with a key observation: in a standard analysis it is ignored that there is an estimable divergence relationship amongst all of the models, as well as divergences from each model to the generating process. I then show that using both sets of divergences, a model space can be constructed including an estimated location for the generating process. Thus, not only an analyst can determine which model is closest to the generating process, she/he can also determine how close to the generating process the best model is. Properties of the generating process estimated from these projections are more accurate than those estimated by model averaging. (Received September 22, 2017)