Estimating climate sensitivity with the ensemble Kalman filter

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We have developed an efficient ensemble climate prediction method based on the ensemble Kalman filter. Using this method, it is now possible for the first time to generate realistic multivariate parameter perturbations which sample the full joint probability distribution function defined by observational estimates of the climate state and assumptions about model error. We will present ensemble-based estimates of climate sensitivity using the CCSR/NIES/FRCGC AGCM MIROC3.2, coupled to a slab ocean.