1135-65-1970   **Jodi Mead*** (`jmead@boisestate.edu`), **Diego Domenzain** and **John Bradford**. *Uncertainty in Joint inversion.*

Simultaneous joint inversion involves optimizing a single objective function with information from multiple types of data. The objective function contains multiple terms so that the data types can work cooperatively, while also honoring the physics of the problem. Each term requires an uncertainty estimate, and the estimates will significantly affect the results. We propose to use data error as an initial uncertainty estimate and add parameters, similar to regularization parameters, to account not only for uncertain data but also uncertain forward models. The additional parameters will be computed by ensuring the minimum value of the objective function satisfies appropriate statistical conditions. We will illustrate the approach by combining observations of energy transfer by electromagnetic fields injected into the earth from a large range of frequencies. (Received September 25, 2017)