1050-00-145   **Sudeep Samanta*** (`ssamanta@whrc.org`), 149 Woods Hole Road, Falmouth, MA 02540, and
Richard A. Houghton, 149 Woods Hole Road, Falmouth, MA 02540. *A component-based
framework for semi-empirical, process-based modeling of carbon flux from terrestrial ecosystems.*

Complex process models integrate multiple interacting components, each representing a simpler process. Often multiple alternatives for modeling one such component are available. However, such alternatives can only be tested within the context of a larger model, which is usually complex and not very transparent. Therefore, the results of testing a component within one specific complex model cannot be easily transferred to a more general context. To address this issue, we are developing a modeling framework to provide a transparent, and easily modifiable, structural context. At its core is a data structure where process functions are represented by function pointers. The data structure takes care of data handling tasks during a simulation, and the computational structure associated with these tasks remain unchanged regardless of the process descriptions. A complete model for a certain system response can be created by putting together various plausible process components through the corresponding function pointers at the initialization stage. This technique provides the ability to test model components by choosing to activate or deactivate them individually for such tests, while retaining transparency in the overall model structural context for the component being tested. (Received March 03, 2009)