



The GLOBCARBON Initiative: Populating the Earth with burned areas

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A major source of uncertainty in atmospheric chemistry modelling is the localisation, timing, and quantification of trace gas and aerosol emissions. This is true in particular for natural biogenic emissions and for emissions from the burning of vegetation. In current models, these emissions are prescribed as monthly mean data sets, derived from a climatology, which is also based on a very limited set of observations. Even though it has long been realised that there might be considerable variability in the natural biogenic and burning emissions, efforts to quantify the variability have only just begun. It is expected that space observations of the state of the biosphere and the frequency and extent of fires will provide a measure to assess the variability of natural and burning emissions in a globally consistent manner. Atmospheric chemistry models are beginning to make use of the fire timing and location to estimate the variability of biomass burning emissions. For example, MPI-M have started to use the ATSR World Fire Atlas to introduce a first-order approximation to the seasonality and inter-annual variability of biomass burning for a new emissions inventory. Until very recently with the appearance of the GLOBSCAR and GBA-2000, further advances in characterising fire emissions have been limited by lack of extended burned area products. This paper reports on the GLOBCARBON Initiative which will provide for modelling purposes, global monthly burned area products initially over the 6-year period from 1998-2003. The GLOBCARBON Initiative will also supply from the same location global data sets that describe the state of the biosphere (Leaf Area Index, f_{APAR} , Vegetation Growth Cycle). It is anticipated that these products will be made available to the wider terrestrial modelling community in the summer of 2005.