

## **CARBON CYCLE IN KARST**

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Karst processes are part of world carbon, water and calcium cycles occur at the interfaces between lithosphere, hydrosphere, atmosphere and biosphere. The projects of UNESCO/IUGS IGCP 299 Geology, Climate, Hydrology and Karst Formation(1990-1994) and IGCP 379 Karst Processes and the Carbon Cycle(1995-1999) promoted the adoption of Earth System Science approaches in karst research. The traditional conceptualization of the  $\text{CO}_2\text{-H}_2\text{O-CaCO}_3$  system has played a role in introducing Earth System Science into the study of karst. It is a model for the karst dynamic system(KDL) and is useful in explaining the carbon cycle in karst. It is a triphase open disequilibrium system characterized by a high sensitivity to environmental change, and so needs special methodologies for its research. In situ measurement and field monitoring are essential. The basic functions of the System are: to drive the formation of karst features and related environmental problems; to contribute to the regulation of greenhouse gases in the atmosphere and to the mitigation of environmental acidification; to drive the migration, enrichment and precipitation of certain elements, and thus the formation of mineral deposits, and thereby influence the biodiversity of life in karst areas; and to record the course of environmental change.