

THE GROUNDWATER DISCHARGE THROUGH KARSTIC COASTAL ZONES AS AN IMPORTANT SOURCE OF CO₂ INPUT TO SEA AND ATMOSPHERE

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It is well known that one of the systemic changes in the Earth's crust and its ecological environment results in the inexorable increase of atmospheric CO₂ concentration. Having in mind that the natural behavior of the carbon cycle is a major focus of actual attention, and that the many extensively studies are devoted to the objective of CO₂ as a contributor to global climate change, as a possible fertilizer of photosynthesis and in many other ways, it would be also particularly interesting to investigate the role of groundwater discharge through karst aquifer systems in coastal zones. One of the significant effect of this freshwater flowing system, besides the strong interaction between coastal ecosystems, is the appearance of an additional CO₂ "intrusion" in the coastal zones and its transfer to coastal seas, respectively on marine biogeochemistry and sea ecosystems. These phenomena are identified in the aquifers of the mountain karst regions with the high valleys and the high rains, like Adriatic coastal zones in Montenegro. However, at present time, the whether coastal seas are net sources of atmospheric CO₂ cannot be answered resolutely, because like other natural systems, coastal seas suffer the influence by numerous physical, chemical, biological and geological processes which respond to external change on various spatial and temporal scale. If we want to know what happens in regional scale and which are effects of anthropogenic perturbations, such as fertilizer applications or acid precipitation it is necessary to investigate more thoroughly the complex role of the groundwater flowing system of karst coastal zones and coastal seas in the objective of global carbon cycle.