Abstract No:GET7

FUNDAMENTAL GROUP IN ACC

***G. Sai Sundara Krishnan ,** R. Syama**
PSG College of Technology, Coimbatore, India
****ssk.amcs@psgtech.ac.in, **syamar585@gmail.com***

The concept of Abstract Cellular Complex(ACC) was introduced by Kovalevsky, to develop a consistent topology, for studying image analysis and data visualizations. In this paper the basic notions of homotopy and path homotopy are introduced using lower dimensional cells in ACC and investigated some of their basic properties. Further the homotopic(path homotopic) relations are defined among the homotopic functions (path homotopic functions) and it is proved that the defined relation is an equivalence relation and its generated an equivalence class of homotopic functions (path homotopic functions). Finally the concept of fundamental groups are introduced by defining a binary operation on the class of path homotopic functions and some of their basic properties are investigated.

Abstract No:GET8

TOPOLOGY ON C(X; Y) DETERMINED BY REGULAR ELEMENTS

Anubha Jindal
Indian Institute of Information Technology Kota
Jaipur, Rajasthan, India
jindalanubha217@gmail.com

The set C(X,Y) of all continuous functions from a topological space X to a metric space Y has a number of natural topologies such as the point-open, compact-open, uniform and fine topologies. However, sometimes none of these topologies is strong enough to apply a function space to a given situation, in which case a finer topology may be needed so that we have a stronger convergence. In 2011 Iberkleid et. al. introduced an interesting topology on $C(X) = C(X,\mathbb{R})$ which is finer than the fine topology. They call it the regular topology or the r-topology. The regular topology or r-topology on C(X) has basic open sets of the form $B_r(f,\eta) = \{g \in C(X) : |f(x) - g(x)| < \eta(x)\ for\ all\ x \in coz(\eta)\}, where\ f \in C(X)$, η is a nonnegative regular element (nonzero-divisor) of the ri$ng\ C(X)\ and\ coz(\eta) = \{x \in X : \eta(x) \neq 0\}$.

Similarly, for a metric space (Y, d), we define the regular topology on $C(X, Y)$ having basic open sets of the form $B_r(f, \eta) = \{g \in C(X, Y) : d(f(x), g(x)) < \eta(x)\ for\ all\ x \in coz(\eta)\}$, where $f \in C(X, Y), \eta$ is a non-negative regular element (nonzero-divisor) of the ring $C(X)$ and $coz(\eta) = \{x \in X : \eta(x) \neq 0\}. Clearly, if\ g \in B_r(f, \eta), then\ g = f\ on\ Z(\eta) = \{x \in X : \eta(x) = 0\}$. The space $C(X, Y)$ equipped with the r-topology is denoted by $C_r(X, Y)$.

In my talk, I would discuss the various topological properties of the space $C_r(X, Y)$. The natural problem in studying $C(X, Y)$ for a general space Y is that we no longer can use the ring structure of $\mathbb{R}$, and therefore the space $C(X, Y)$ may not be a group.

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COMPLETELY HOMOGENEOUS C-SPACES

Sini P.
Department of Mathematics, University of Calicut.
sinimecheri@gmail.com

In this paper we characterize completely homogeneous c-spaces. Various properties of completely homogeneous c- spaces are discussed.