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**COMPOSITION OPERATORS ON FUNCTION SPACES OF A GRAPH**P. Muthukumar<sup>1</sup><sup>1</sup> pmthumaths@gmail.com; Indian Statistical Institute, Chennai, India

*We discuss some necessary and sufficient condition of boundedness and compactness of composition operators in various analytic function spaces.*

**Keywords:** Bloch space, Lipschitz space, graph, composition operators.

The study of composition operators on various analytic function spaces defined on the open unit disk is well-known. Recently, Colonna et al. defined the Lipschitz space of a infinite tree as discrete analogue of classical Bloch space and study the composition operator on them. Since infinite trees are widely regarded as discrete version of Hyperbolic disk in complex plane, studying composition operators on trees becomes interesting and it opens up the door for studying composition operators from analytic function spaces to discrete function spaces.

We have defined a discrete analogue of generalized Hardy spaces on a homogeneous rooted tree and studied the basic properties such as boundedness and compactness of composition operators on them. Also, we calculated the operator norm of the composition operator when the inducing symbol is an automorphism of a homogenous tree.

In this presentation, we first recall some basic issues concerning composition operators on Lipschitz space of a infinite tree graph and we continue the discussion about composition operators on the discrete analogue of Hardy spaces. We mainly discuss some necessary and sufficient condition on the symbol  $\phi$  so that the composition operator  $C_\phi$  induced by  $\phi$  is bounded and compact operator.

This is a joint work with Prof. S. Ponnusamy.

**References**

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