Robert F Allen and Flavia Colonna* (fcolonna@gmu.edu), 4400 University Drive, Fairfax, VA 22030, and Glenn R Easley. Multiplication operators on Lipschitz-type spaces over a tree.

In recent years, the operator theory of many functional Banach spaces that arise in complex function theory has been studied extensively. However, very little has been done in a discrete setting. An important class of operators to be discussed in this talk is the multiplication operators

\[ M_\psi(f) = \psi f, \]

where \( \psi \) is a function defined on an infinite tree \( T \) and \( f \) belongs to a functional Banach space with domain \( T \). An environment for this study is a space \( \mathcal{L} \) of Lipschitz functions on \( T \), that is, the functions \( f \) satisfying

\[ |f(v) - f(w)| \leq C d(v,w), \quad v, w \in T, \]

for some \( C > 0 \), where \( d(v,w) \) is the number of edges in the unique geodesic path from \( v \) to \( w \). The space \( \mathcal{L} \) may be considered as a discretization of the familiar Bloch space. Characterizations on the boundedness and compactness of the operator \( M_\psi \) as well as operator norm and essential norm estimates and a description of the spectrum will be given. The multiplication operators on a class of weighted Lipschitz spaces over a tree will be also considered. (Received September 11, 2010)