1035-41-779 **Ahmed I Zayed*** (azayed@math.depaul.edu), Department of Mathematical Sciences, DePaul University, 2320 N. Kenmore Ave, Chicago, IL 60614. *Sampling Expansions for a Class of Analytic Functions and Their Asymptotics.* Preliminary report.

We introduce sampling expansions for a class of functions analytic in the upper half-plane. This class is a subclass of the Hardy space H^2_+ of functions that are analytic in the upper half-plane. The sampling points are eigenvalues of a non-self-adjoint boundary-value problem with the eigenvalue parameter appearing in one of the boundary conditions. The eigenvalues also appear as resonances in the Lax-Phillips scattering theory. We examine the asymptotic behavior of the sampling points and the accuracy of the expansions. One of the applications of our sampling result is that it provides a reconstruction formula for a class of analytic signals which plays an important role in communication engineering. (Received September 15, 2007)