

1075-46-15

Saroj Aryal* (saryal@uwyo.edu), Mathematics Department, 1000 E. University Avenue, Laramie, WY 82072, and **Farhad Jafari**. *Exploring sub-moment sequences and solutions to sub-moment problems*. Preliminary report.

In many problems associated with realization of a signal or an image, data may be corrupted or missing. Reconstruction of a function from moment sequences with missing elements is an interesting problem leading to several advances in image and/or signal reconstruction.

The well-known theorems of Hamburger, Carathéodory and Nevanlinna establish conditions on finite sequences of real numbers to be the moments corresponding to functions in various function spaces. It is easy to show that a subsequence of a moment sequence may not be a moment sequence. Conditions are obtained to show how rigid the space of sub-moment sequences of a moment sequence are. Some characteristics of the spaces of functions reconstructed from sub-moment problems are explored. (Received July 02, 2011)