

UNIFORM,
NONUNIFORM
AND
GENERALIZED
SAMPLING

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<http://www.rle.mit.edu/dspg>

In this talk some of our recent and current work on sampling, and in particular nonuniform and generalized sampling will be discussed. The topics to be described are listed below. All of the references below can be accessed at <http://www.rle.mit.edu/dspg>

•Nonuniform Nyquist sampling

Y. C. Eldar and A. V. Oppenheim. "Recurrent Nonuniform Sampling" IEEE Trans. Signal Processing, Oct. 2000.

•Uniform sampling with erasures

•A. Russell, "[Regular and Irregular Signal Resampling](#)", Doctoral Thesis, August 2002.

•S. R. Dey, "[Digital Pre-Compensation for D/A Converters: The 'Missing Pixel Problem'](#)", Master's Thesis, December 2003

•S.R. Dey, A.I. Russell, A. V. Oppenheim, "[Pre-Compensation for Anticipated Erasures in LTI Interpolation Systems](#)", IEEE Transactions in Signal Processing, Jan. 2006.

•Nonuniform sampling based on local bandwidth

•Randomized (down) sampling

M. R. Said and A. V. Oppenheim, "[Discrete-Time Randomized Sampling](#)", in Proc. Int. Conf. on Electronics, Circuits, and Systems (ICECS-2001), (Malta), September 2001.

- **Sampling Based on Laguerre Expansions**

A.V. Oppenheim and D.H. Johnson. "[Discrete Representation of Signals](#), " *IEEE Proceedings*, Vol. 60, No. 6, pp. 681-691, June 1972.

- **Nonuniform frequency sampling based on frequency warping**

C. Raccini and A.V. Oppenheim. "[Unequal Bandwidth Spectral Analysis Using Digital Frequency Warping](#), *IEEE Transactions on Acoustics, Speech and Signal Processing* , Vol. ASSP-22, No. 4, pp. 236-244, August 1974.

C. Asavathiratham, P. Beckmann, and A. V. Oppenheim. "[Frequency Warping in the Design and Implementation of Fixed-Point Audio Equalizers](#)", *Proc. IEEE Workshop on Applications of Signal Processing to Audio and Acoustics*, (New Paltz, NY), October 1999.