

43rd SYMPOSIUM ON THE SEARCH FOR EXTRATERRESTRIALINTELLIGENCE (SETI) – The
Next Steps (A4)
SETI 1: SETI Science and Technology (1)

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THE KARHUNEN-LOEVE TRANSFORM, DIGITAL SIGNAL ANALYSIS AND THE INFORMATION
THEORY

Abstract

The field of Digital Signal Processing (DSP) is governed by the Fourier Analysis (FFT) in which each signal is assumed to be the summation of sine functions. The Karhunen-Loeve Transform (KLT) can also be used in analysis signal and removing noise from it. It is a more powerful method than FFT. This paper will illustrate the use of KLT in DSP. The eigenvalues associated to a stream of data can reveal the level of information contains in it. This paper will also present some results of the use of the KL Transform in field of the Information Theory.