DISCRETE COSINE TRANSFORM AND ITS APPLICATION USING VEDIC ALGORITHM

S. ARUNACHALAM[1], S. M. KHAIRNAR[2] AND B. S. DESALE[3]
[1] Department of Mathematics,
Rizvi College of Arts, Science and Commerce, Mumbai,
and Research Scholar, North Maharashtra University, Jalgaon, India
[2] Department of Mathematics, MIT Academy of Engineering, Pune, India
[3] Department of Mathematics, University of Mumbai, Mumbai, India

Abstract

The Discrete Cosine Transform (DCT) is a technique of converting a signal into elementary frequency components. The computation of DCT is a computationally intensive problem in a number of signal processing applications, for example in image and video coding. This paper reviews the computation of the DCT. We have proposed the two-dimensional DCT algorithm which is applied to the Vedic multiplier based on Vedic multiplication sutra called Urdhva-Tiryakbhyam Sutra with MATLAB. The proposed algorithm is compared with conventional algorithm. The DCT computation using Vedic multiplier gives a significant performance as compared to the DCT using conventional method.

––––––––––––––––––––––––––––