

**Abstract :**

Here we present a new technique of noise effect reduction when analyzing the 3D GPR data using the 2D Continuous Wavelet Transform (CWT). The proposed technique is based on the application of a Gaussian low pass filter at the modulus of the 2D CWT for low scales. After application of the low pass filter, maxima of the CWT are mapped for all range of scales. Application at a noisy GPR data shows that the proposed idea can improve the noisy 3D GPR data analysis using the wavelet transform.