

Application of Transform Methods in Forensic Science

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Abstract: *Transform methods have become indispensable tools in modern forensic science by enabling efficient analysis, enhancement & interpretation of complex forensic evidence. These mathematical techniques convert data into alternative domains, allowing investigators to identify hidden patterns, reduce noise and extract meaningful features from images, audio signals, documents and biological samples. Widely used methods as the Fourier Transform, Laplace Transform, Wavelet Transform, Z-Transform and Discrete Cosine Transform have significantly improved accuracy & reliability of forensic investigations. Integration of transform methods with artificial intelligence and machine learning has enhanced automated evidence analysis and decision-making. This review highlights the principles, applications, advantages and limitations of major transform methods in forensic science and discusses emerging trends that are shaping future of forensic investigation & criminal justice*

Keywords: Transform Methods, Forensic Science, Fourier Transform, Digital Image Processing & Signal Analysis