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## Sommario/riassunto

"Hilbert Transform Applications in Mechanical Vibration addresses recent advances in research and applications of the modern Hilbert transform to vibration engineering, through which laboratory dynamic tests can be produced more quickly and accurately. The author integrates important pioneering developments in signal processing and mathematical models with typical properties of mechanical constructions such as resonance, dynamic stiffness and damping. This unique merger of technical properties and digital signal processing allows the instant solution of a variety of engineering problems and in-depth exploration of the physics of vibration by analysis, identification and simulation. Hilbert Transform Applications in Mechanical Vibration employs the author's pioneering applications of the Hilbert Vibration Decomposition method characterized by high frequency resolution, and provides a comprehensive account of the main applications, covering dynamic testing and extraction of the modal parameters of nonlinear vibration systems including the initial elastic and damping force characteristics."--

"The Hilbert transform allows identification of linear and non-linear elastic and damping characteristics including the instantaneous modal parameters and the initial force characteristics under free and forced vibration regimes"--

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