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SOME ASPECTS OF ADVANCED APPLICATION FOR FRACTIONAL WAVELET TRANSFROM IN THE REAL LIFE APPLICATIONS

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The principle of intelligent material or construction diagnosis and its application prospects in structural properties detection (e.g. damage, fatigue, damping) is based on the on structural dynamic characteristic parameters. The system response is evaluated by vibro-acoustic signals and is usually very short and noisy. The new recently developed fractional wavelet transform technique offers very handy tool to perform the signal analysis for pattern, feature search - especially in denoising, spike removal and compression of data set. Presented are the advantages of the fractional wavelet over the rest of the conventional (Fourier transformation) signal analysis techniques as well as other wavelet analysis techniques in the real life applications (e.g. constructions, material crack, and damping).