

## عنوان مقاله:

Application of Wavelet Components Energy in Jacket Platform Damage Identification Base Dynamic Response

## محل انتشار:

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## خلاصه مقاله:

Identification of damage has become an evolving area of research in last few decades with increasing the need of online health monitoring of the large structures. The visual damage detection can be impractical, expensive and ineffective incase of large structures, ex. offshore platforms, offshore pipelines, multistoried buildings and bridges. Damage in asystem causes a change in the dynamic properties of the system. The structural damage is typically a local phenomenon,which tends to be captured by higher frequency signals. Most of vibration-based damage detection methods require the modal properties that are obtained from measured signals through the system identification techniques. However, the modal properties such as natural frequencies and mode shapes are not such a good sensitive indication of structural damage. Identification of damaged jacket platform members, based on wavelet packet transform is presented in this paper. The jacket platform is excited by simple wave load. Dynamic signals are measured from the finite elementsoftware package. The dynamic signals first decomposed into wavelet packet components. Then by eliminate some ofthe component signals (eliminate approximation component of wavelet packet decomposition), component energies ofremained signal (detail components) are calculated and used for damage assessment. This new method called Detail Signal Energy Rate Index (DSERI). The results show that reduced wavelet packet component energies are good candidate indices which are sensitive to structural damage. These component energies can be used for damage assessment including identifying damage occurrence and can find the location of damaged elements

## کلمات کلیدی:

Offshore Platform, Damage Detection, Wavelet Transform, DSERI

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/473963>



