

## عنوان مقاله:

Evaluation of Vortex Induced Vibration Effective Parameters on Free-Span Subsea Pipelines

## محل انتشار:

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## خلاصه مقاله:

Subsea pipelines due to the reduction of transfer costs and expedite the offshore operations is one of the all-purpose structures in marine industries. Subsea pipelines are exposed to a variety of hazards, including corrosion and fatigue Etc. Free span exacerbates the fatigue required parameters due to a phenomenon called the Vortex Induced Vibration (VIV). In this research, the influence of the spanchr('39)s length on the free span subsea pipeline has been reviewed with ABAQUS standard code. In this study the previous result has been expanded. The results of the VIV fatigue life are extensible to all of the depth. Achieved Results indicate that the fatigue life of the pipeline even in the worst condition is much higher than the required amount that it represents the upstream design of DNV-RP-F105. In this study the backrest pipeline has been investigated and result show that the pipeline under the different conditions in the backrest, by creating more vibration and displacement on one side of the pipeline reduces the fatigue life of 113 percent compared to snap. The VIV fatigue life has undergone a lot of changes due to span length changes, maximum changes occur between cable and behavioral which the amount of these changes is reduced by 75%. The free span length is another factor in VIV fatigue. VIV fatigue life will be increased by reducing the span length. As well as increasing the flow velocity that is the main factor in creating the VIV is increased fatigue. Therefore, in terms of the accuracy in the choice of the existing conditions of very high importance for the pipeline. Comparison between effect .parameters in VIV fatigue life was shown that span length is the most effective parameter

## کلمات کلیدی:

Upheaval Buckling, Pipeline, ABAQUS, Vortex Induced Vibration, Free Span

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