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# Online Reconstruction of Concentrated and Continuously Distributed Force Using a Robust Observer Technique

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In this contribution, a type of observer which can realize simultaneous state and input estimation is adopted to online indirect force measurement. This method allows the reconstruction of unknown concentrated force and system states such as displacement and velocity. Additionally, a continuously distributed force can be described as a linear combination of a series of orthogonal force basis functions. Based on measured structural responses, the designed observer can estimate the time histories of several dominant force basis functions, so that the continuously distributed force could be reconstructed with acceptable accuracy. The observer design is accomplished by using a pole placement method.

## Ключевые слова:

## Содержание.

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