전남대학교 일반대학원 기계공학과

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# 기계공학과 박사 학위청구논문 공개발표

- 일시: 2023년 06월 08일, 목요일, PM 5:00

- 장소: 공과대학 1A-218호

## Vision-based Displacement Measurements using Local Image Phase for Structural Dynamics Applications

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**Abstract**

Over recent years, numerous camera-driven motion estimation methodologies have gained traction in the realms of structural health monitoring and condition monitoring. These can be categorized into two primary groups: techniques employing image intensity- and image local phase-based measurements. Local phase is generated through the convolution with even- and odd-symmetric filters, offering increased robustness to image intensity fluctuations. This research delves into the optimization of local phase generation and motion estimation for precise and robust displacement measurements. Three key techniques are developed to address challenges posed by complex environments for real-world structural dynamics applications: a) phase-based displacement measurement using optimal complex filter; b) optimal marker design for performance improvement; c) vibration imaging.

**[사용언어: 영어]**