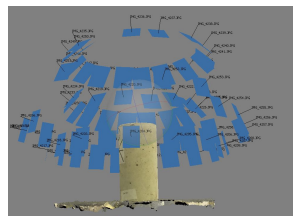
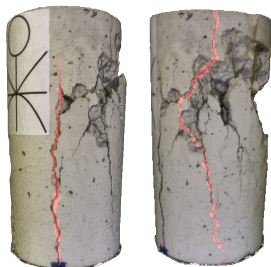
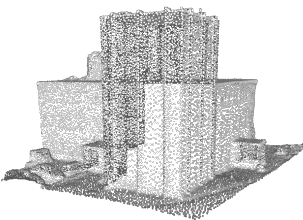
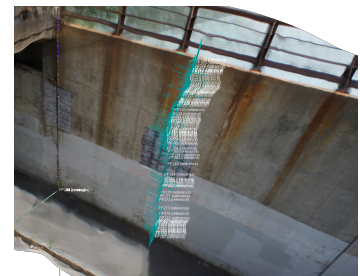
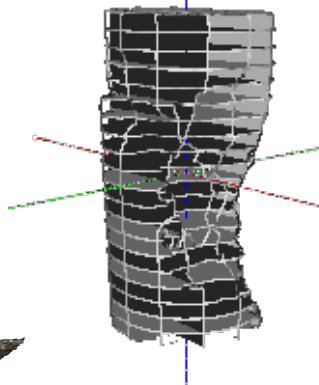
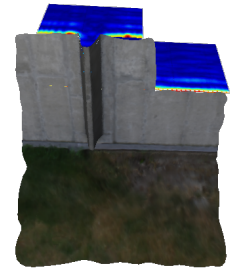
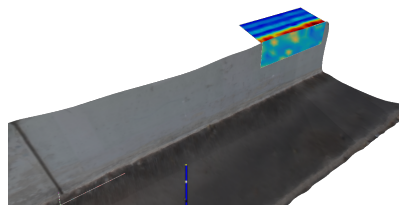


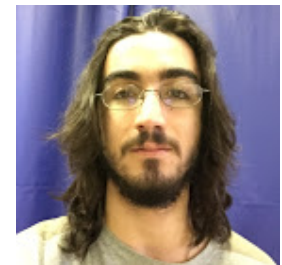
- Abstract:** Photogrammetric methods such as structure from motion (SFM) have the capabilities to produce models with accurate geometric, surface and mechanical information. Point cloud models (PCM) can be used for visual inspection, data registration, and condition assessment. Lab specimens and in-situ models were constructed and evaluated from practical usage and accuracy of content. Results show the uses, as well as limitations of this remote sensing and non-destructive technique with regards to evaluating civil infrastructure.

- Theoretical background:** Photogrammetry is the art or science of compiling three dimensional (3D) information two dimensional (2D) information. Structure from motion (SFM) methods described in this work employ the use of point cloud models which can be used to create surface models for evaluation of condition.

- Results:** Models were found to exhibit geometrically accurate information with less than 5% error. Models were shown to be effectively used for visual inspection, surface crack profiling, damage assessment, and data registration. Mechanical properties were found to correlate to photogrammetric data and finite element models were constructed for photogrammetric evaluation of condition assessment.



- Conclusion:** SFM PCM techniques are effective for the evaluation and analysis of concrete structures & specimens.
- Ref.:** N D'Amico, T Yu, *SPIE SS/NDE Conf.*, Vol. 9804, doi: 10.1117/12.2218640.



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