# Dataset to track concrete cracking using DIC with fixed and moving camera

**SND-ID**: 2024-399.

### Associated documentation

ATTACHMENT01 (1).pdf *(1.92 MB)*

### Citation

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### Creator/Principal investigator(s)

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### Research principal

Royal Institute of Technology

### Description

Today, Digital Image Correlation (DIC) has become a standardized method to track displacements and crack-propagation of civil engineering structures in a laboratory environment. The benefit of using DIC over other standard methods is that it is contact-free and only requires a standard DSLR camera. Moreover, the displacement can be tracked over the entire image, which is a great advantage compared to the limitations of standard sensors that only measure the deformation at a specific point. In standard DIC, the displacements are directly extracted from the images. Hence, the position of the camera must be fixed during the entire test. Therefore, DIC is commonly used in a laboratory environment to measure displacement during short-term testing, e.g. testing of the structural capacity of a reinforced concrete beam. The data presented in this paper was used to verify a newly developed and innovative photogrammetric algorithm, Deformation from Motion (DfM). This algorithm overcomes the standard limitation of traditional DIC and enables high-accuracy measurements to be performed using a camera with no fixed position. As a reference, the crack propagation was on one side monitored with a LVDT and on the other side with a camera with a fixed position. During testing, a moving camera also captured imagery on both sides.

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The dataset was originally published in DiVA and moved to SND in 2024.

### Data contains personal data

No

### Language

English

### Data format / data structure

Still image

Software

Other

### Funding


- Funding agency: Vinnova
- Funding agency's reference number: InfraSweden2030


### Identifiers

URN: urn:nbn:se:kth:diva-336505

### Research area

Infrastructure engineering (Standard för svensk indelning av forskningsämnen 2011)

### Keywords

Digital image correlation, Crack monitoring from motion, Cracked concrete, Concrete structures, Geoinformatics

### Accessibility level

Access to data through an external actor
Data are freely accessible

### License



### Download metadata

DataCite

DDI 2.5

DDI 3.3

DCAT-AP-SE 2.0

JSON-LD

PDF

Citation (CSL)

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