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## The Scanning Photogrammetry

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**Keywords:** Scanning photogrammetry, Close-range Photogrammetry, Multi-baseline, Aerial triangulation, Engineering survey, Deformation monitoring

**Abstract.** The paper proposes a new photogrammetry method, the scanning photogrammetry, to solve the problem that large targets can hardly be processed as a whole one in close-range photogrammetry. The method enlarges the view angle and intersection angle effectively by rotating camera in horizontal and vertical direction when photographing large targets. Meanwhile, it is a kind of multi-baseline photogrammetry which increases matching reliability and improves the quality and quantity of observations. Besides, in order to acquire images automatically, we develop the photograph scanner which ensures the efficiency and quality of photography. And the scanning photogrammetry system has been successfully used in deformation monitoring of Women Circumvallation in the Forbidden City. In the experiments, data is processed automatically by classical triangulation and self-calibration bundle adjustment. The result proves that the precision can meet with the deformation monitoring requirements and data processing efficiency accomplishes to engineering measurement applications.

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