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## Surface deformation changes monitoring using persistent scatterer interferometry: A review

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**Abstract:** Development of Interferometric Synthetic Aperture Radar (InSAR) have been revolutionized in line with the technology's sophistication. It is contributed to the high precision of measurements from satellite imagery to be used in surface deformation monitoring measurements. Deformation of the earth surface is a result from the environmental issues such as landslides, volcanoes, earthquakes, underground water excessive extraction and another phenomenon. InSAR data time series analysis has been a valuable tool for measuring and analyzing the displacement of the Earth's surface. The method known as Persistent Scatterer Interferometric Synthetic Aperture Radar (PS InSAR) which provides millimeter accuracy measurements of the surface deformation. Hence, this article is an attempt to review the four Persistent Scatterer Interferometry (PSI) techniques which have been developed for deformation measurements. A few case studies in practicing PSI techniques are summarized to determine the ability of this technique. Future outlooks are also discussed on realising the PSI technique in Malaysia and its important in supporting various agency in Malaysia. In conclusion, this review will contribute to the technique that suitable for Malaysia and better planning for development in this country.

**Keywords:** Interferometric Synthetic Aperture Radar (InSAR), surface deformation, Persistent Scatterer Interferometry (PSI)

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