Bridge Monitoring Using TLS, Accelerometers and Groud Based–Radar Interferometry

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SUMMARY

The paper deals with long-term and dynamic geodetic monitoring of a steel bridge construction - the Liberty Bridge. The bridge allows join for pedestrians and cyclists between Bratislava city district Devínska Nová Ves (Slovak republic) and Schlosshof (Austria). For the dynamic monitoring of the construction was used the technology of ground-based radar interferometry and accelerometers, for the long-term monitoring the technology of terrestrial laser scanning. The monitoring, the data processing using Fast Fourier transformation (for accelerometers and ground-based radar) and Singular Value Decomposition of matrixes (for TLS) and the results are described. Results are compared with model frequences calculated for the bridge by FEM.