

## Determination of Track Modulus and its Influence on Track Quality for Conventional Ballasted Track

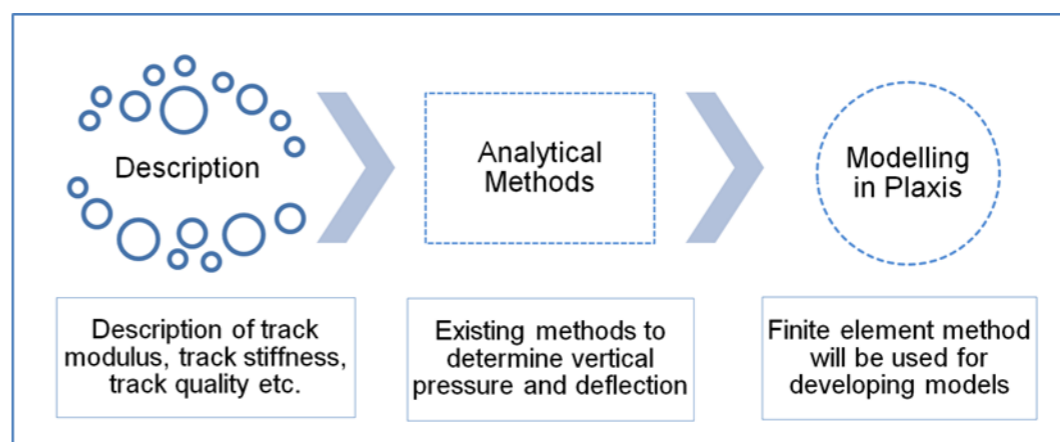
This thesis has primarily dealt with the determination of track modulus on conventional ballasted track and its subsequent influence on the track quality. At first, the different analytical methods for calculating track modulus has been discussed. Based on the study of these methods, the relationship between the vertical pressure and the track modulus has been found out. After that, a model has also been developed by numerical method in simulation software Plaxis 2d. This model can show the relationship between the track modulus, the vertical pressure and the vertical deflection for the light rail transit system. Finally, the results has been compared for the vertical track deflection from both methods; the analytical methods and, from the numerical models in Plaxis. The outputs of the numerical model has been calibrated and validated with the outputs of the analytical method.

Apart from the development of the numerical model and the analysis of the analytical method, this thesis also provides a scientific methodology for future works. This methodology has been modified and developed in the run of time with the support from expert supervisors. While following the methodology of the thesis, a strict and disciplined time schedule has been adopted, that has helped to come up with concrete results.

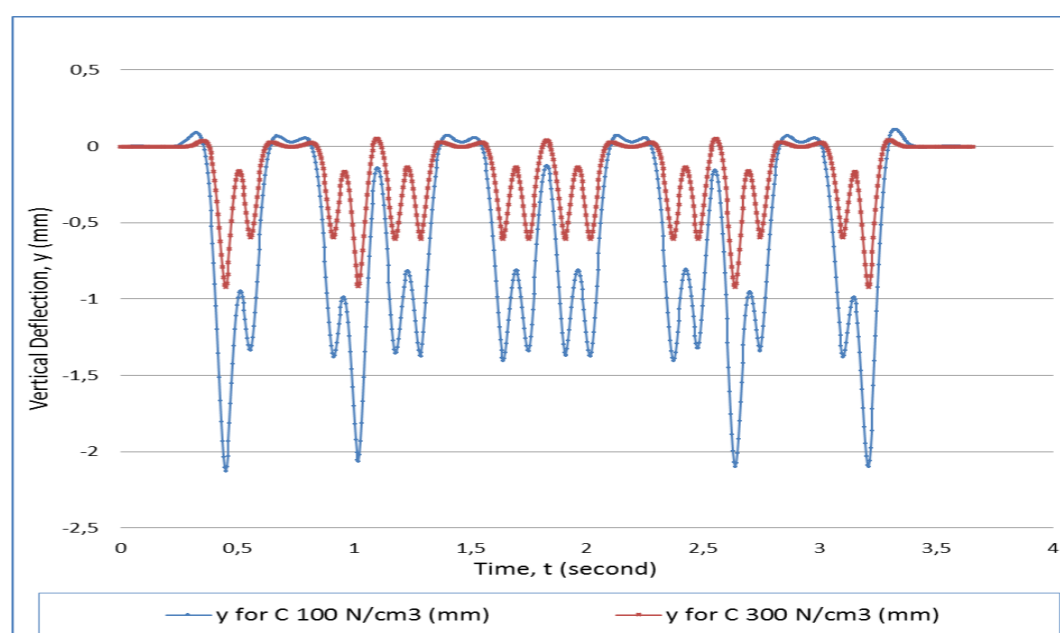


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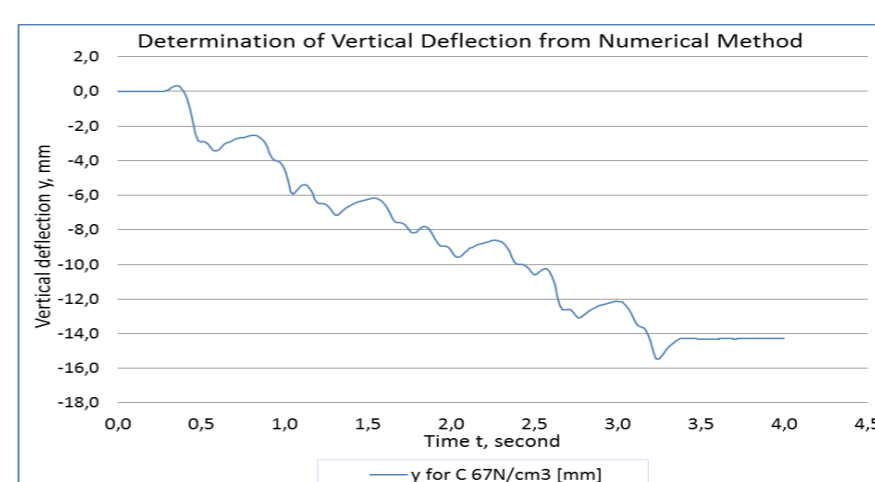
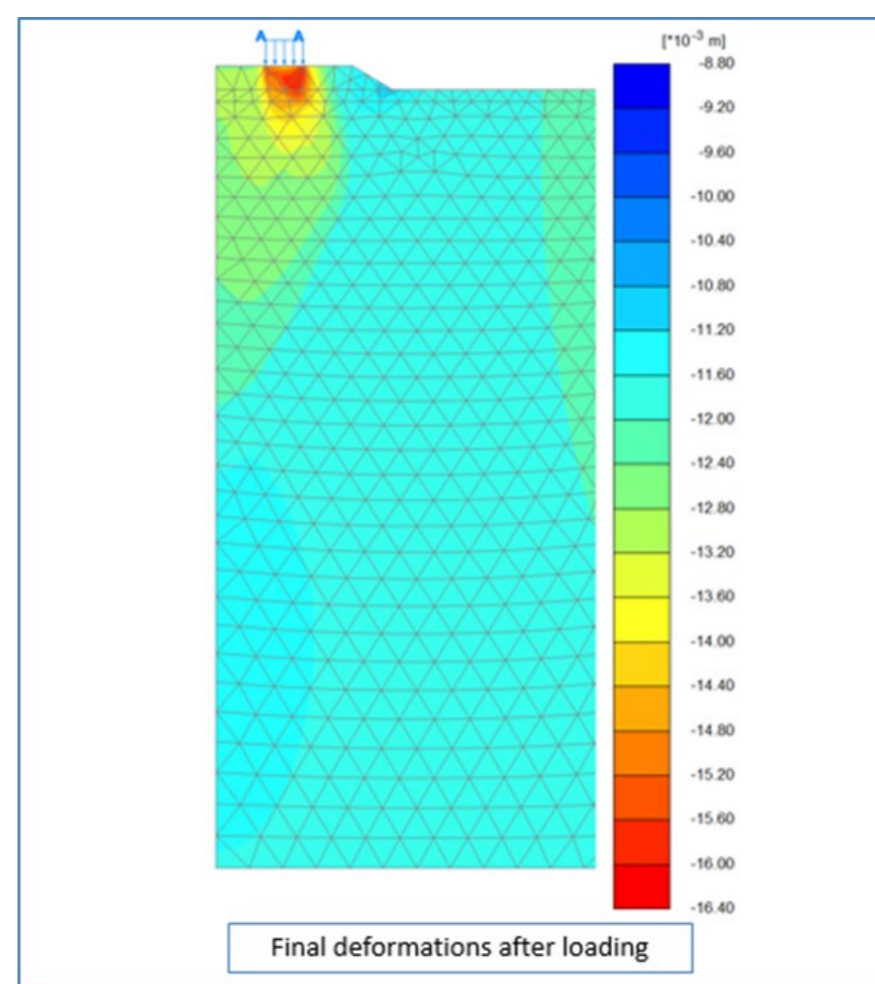
### Methodology of this Thesis



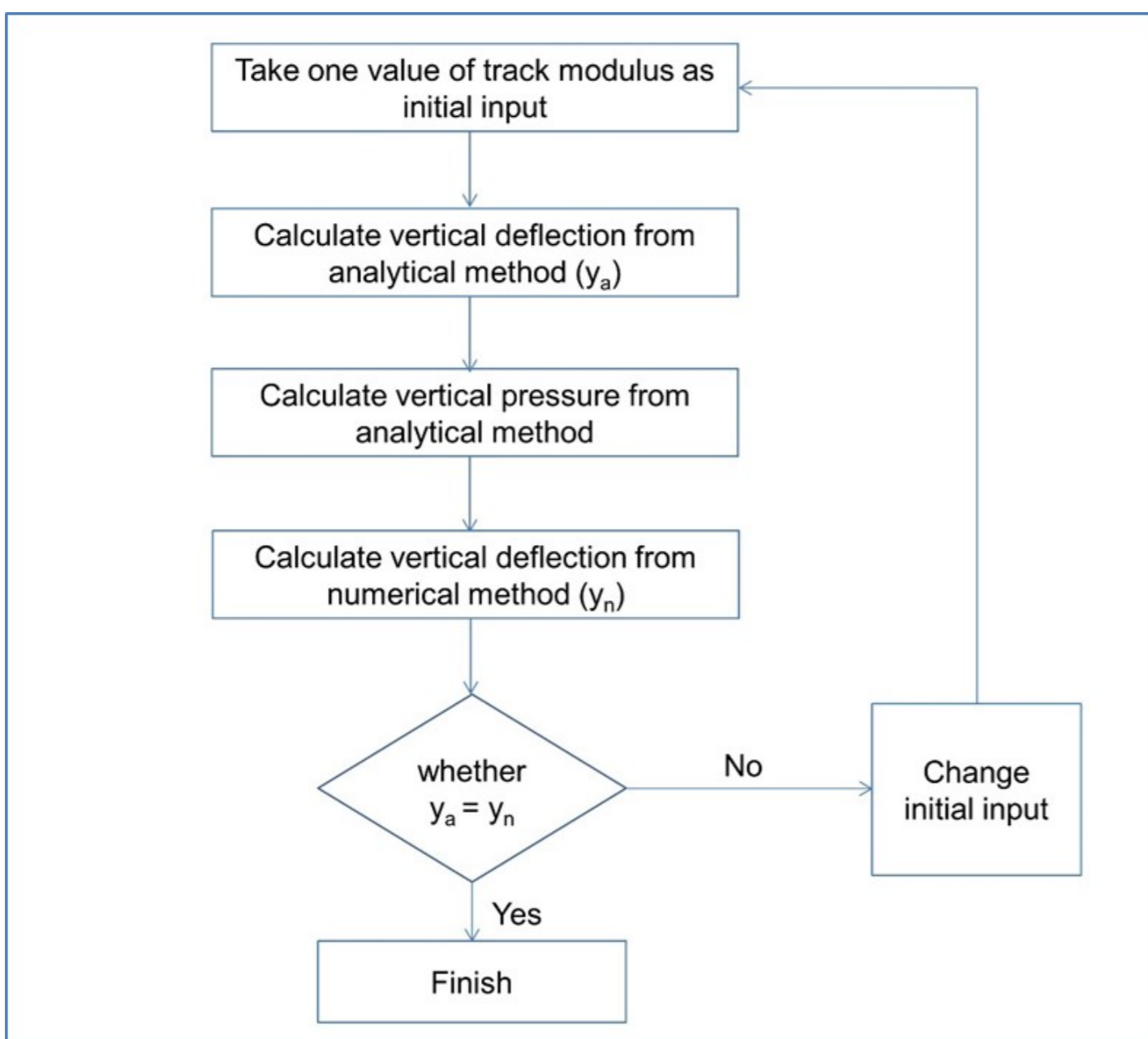
### Result from the Analytical Method



### Simulation Result from the Numerical Method



### Working Methodology for the Calibration of Numerical Method



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