DOV lezingenavond 7 juni 2018, 18.30 – 20.30 uur

Boerderij De Middenhof, Duetlaan 1-3, 3438 TA NIEUWEGEIN
www.demiddenhof.nl

Extra capaciteit Balkroosterbrug

Kees Jan van der Wilt (Iv-Infra BV)

Het betreft een betonnen balkenroosterbrugdek. Voorafgaand is er aan de hand van een plaatberekening geconstateerd dat er onvoldoende capaciteit in de dwarsrichting is.
Met behulp van een niet-lineaire berekening in DIANA is aangetoond dat het dek wel voldoet.

Generic Python Script for Analysing Experimental RC Beams

Jonna Manie (DIANA FEA BV)

A generic python script is being developed to model, analyse, and report experimental reinforced concrete beams in the DIANA Interactive Environment (DianaIE). Based on the user input, cross-sectional properties, web openings, and locations of the reinforcement bars and stirrups, either a two-dimensional curved shell model, or three-dimensional solid model is prepared. Further, the user provides information on the supports and loading, force or prescribed displacements, and the basic material properties for the concrete, i.e. Young's modulus, compressive and tensile strength, and the reinforcements, i.e. Young's modulus, yielding strength, and hardening properties. From the results of the structural nonlinear analysis, which is also set-up by the python script, output result screenshots, a basic report, and convergence overview is generated. Feedback from the users is being used to extend and enhance the python script.

Modelling an entire skew girder bridge with shell elements

Maciej Kraczla (ARCADIS)

A common engineering practice to assess structural resistance of existing structures is executed through the so-called Quick Scan tools. Besides the ULS values, these tools are often used to determine the most detrimental loading situation.
The presentation concerns a NLFEA of a skew bridge, previously assessed with the Quick Scan. The "actual" capacity of the bridge was investigated by means of a "2,5D" shell element model. The bridge is constructed with 11 prefabricated post-tensioned T-shaped girders, concrete joints and end cross beams. The bridge was statically loaded with the loading configurations from a Quick Scan deemed to result in the lowest shear capacity.
In the presentation, the adopted modelling technique and obtained results are discussed. The primary points of interest are: pros and cons of the method i.e. encountered problems and software issues, applicability of the method to investigate shear failure and qualitative comparison of the results with the outcome from the Quick Scan.

Workflow DIANA

Gerd-Jan Schreppers (DIANAFEA BV)

Naar aanleiding van de wens van de gebruikers van DIANA zal er aandacht worden gegeven wat de gedachte is achter de deels geïmplementeerde workflow rondom analyses. Tevens wordt een doorkijk gegeven wat er nog aan zit te komen en tenslotte zal er een live demo getoond worden op basis van de huidige DIANA versie.