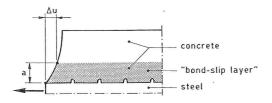
Msc Thesis Presentation

SIMULATION OF STEEL-CONCRETE BOND-SLIP WITH SEQUENTIALLY LINEAR ANALYSIS USING INTERFACE ELEMENTS

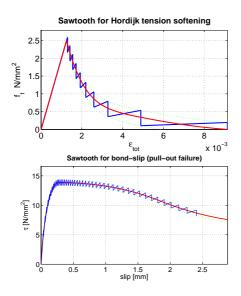
25 May 2010 - 16:30 - Lecture room C - Faculty of Civil Engineering and Geosciences

Sebastiaan Ensink

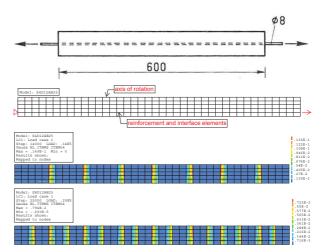
For cracking and crack development in reinforced concrete structures bond between steel and concrete is an important factor. In com-



putational modelling bond behaviour is often not taken into account. To simulate bond behaviour with conventional non-linear analysis computational problems can arise such as non-convergence or bifurcations. An alternative is the use of Sequentially Linear Analysis (SLA). In this Master Thesis Presentation



several extensions to SLA (interface- and axisymmetric elements) will be presented. These extensions will be used to simulate the cracking behaviour in tension-pull experiments in comparison to non-linear analysis. A bond model (developed by Den Uijl & Bigaj) will be presented that was used in the calculations.



Tension-pull experiment, mesh using axisymmetry and calculated crack pattern with 0.5% and 1.0% reinforcement

Examination committee:

Prof.dr.ir. J.G. Rots Dr.ir. M.A.N. Hendriks Ir. J.A. den Uijl A.V. v.d. Graaf Msc Ir. L.J.M. Houben