

DIANA : 3D, 2D, and micro versions

DIANA is a well-known three dimensional and non-linear finite element program. Engineers in different parts of the world use *DIANA* in their work on bridge design, dams, offshore platforms, road and rail design and tunnelling. *DIANA*'s most notable strong point is its power in the field of concrete and soil.

Now *DIANA* also includes a liquefaction module. The Kobe earthquake in Japan, which occurred on January 17 1995, showed the destructive effect of soil liquefaction. It obviously created a need for a tool to be better prepared in the future and therefore the liquefaction project was initialised. A unique model was developed based on the Arbitrary Lagrangian Eulerian (ALE) method, where the material is flowing through the mesh. Together with geotechnical models that were already available in *DIANA*, the liquefaction module is a powerful tool to analyse liquefaction and its effects on the environment. Besides the full *DIANA 3D* version, *Micro-DIANA* and *DIANA 2D* are also available.

Micro-DIANA

Micro-DIANA is a new product which is a complete finite element program and is also provided with an integrated pre and post processor. Modelling with the *DIANA* pre-processor is comparable to *CAD* software. Besides generating the mesh, it is also possible to define materials, geometry, boundary conditions and loads. The *DIANA* post-processor enables easy assessment of the results of analyses. Results of displacements, stresses and strains are presented both numerically as well as in contour plots, vectors and graphics.

Micro-DIANA, just like *DIANA 3D*, has a modular structure and contains all primary and supplementary modules. These include linear static, eigen value, non-linear, dynamics, shock and response analysis, US-subroutines, flow and heat transfer, Euler stability analysis and parameter estimation. With its 300 nodes, the program is particularly suitable for smaller but complicated analyses. *Micro-*

DIANA is also very successful as an educational tool.

DIANA 2D

With 7.2 version *DIANA 2D* has also become available. It has all capabilities and features of *DIANA 3D* and the number of nodes is also unlimited. The user is restricted to 2D analyses. Functionalities of *DIANA 2D* are X-Y plane, all analysis types and all material models. Element types are 2D beams, plane stress, plane strain and axisymmetric.

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