DIGASYS N.V./S.A.

Digital Analysis of Systems

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Diginfo

The engineers of DIGASYS have a long experience in solving vibration, noise and fatigue problems.
In order to help you finding solutions or avoiding problems in dynamics DIGASYS disposes of many technologies:

- **multi channel spectral analysis of vibration, sound, forces, stresses…**
- **measurement of natural frequencies**
- **signature analysis**
- **running mode en modal analysis**
- **sound intensity**
- **finite element calculations**
- **software for lifetime prediction**

Our approaches are frequently used with success in following applications:

- **reduction of vibration levels in compressor piping**
- **design and improvement of machine foundations**
- **optimising of vibration isolation**
- **solving of resonance problems in structures**
- **measurement of vibration comfort in vehicles and buildings**
- **noise reduction of machines**
- **measurement of dynamic forces in bolts**
- **fatigue load analysis of vehicles**
- **telemetry on rotating machinery**
- **calculation of the dynamic behaviour of structures**

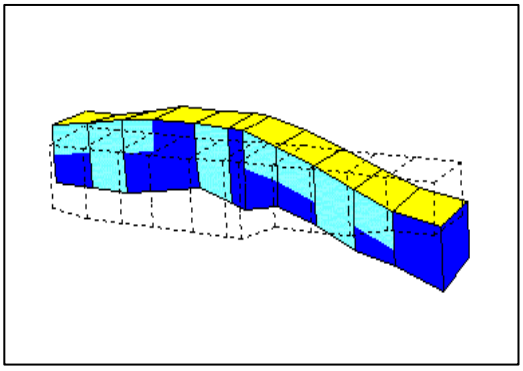
If you want more information concerning our activities, don't hesitate to contact us. It will be a pleasure for us to help you and we can make you a proposition without any obligations.

Dr. Ir. E. Vansevenant

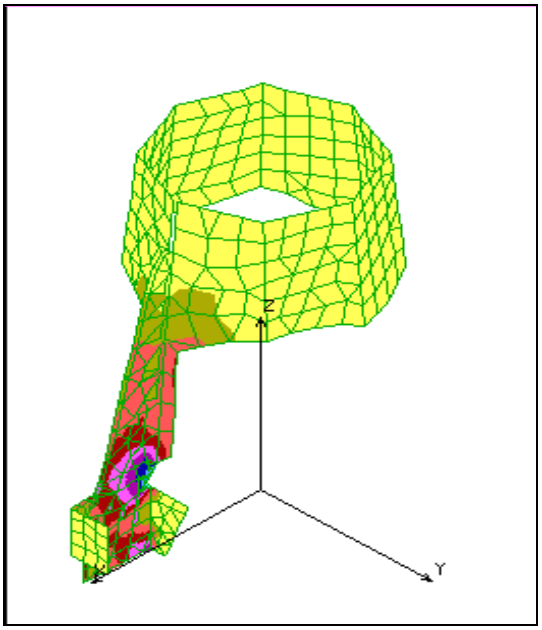
• Dynamics of vehicles

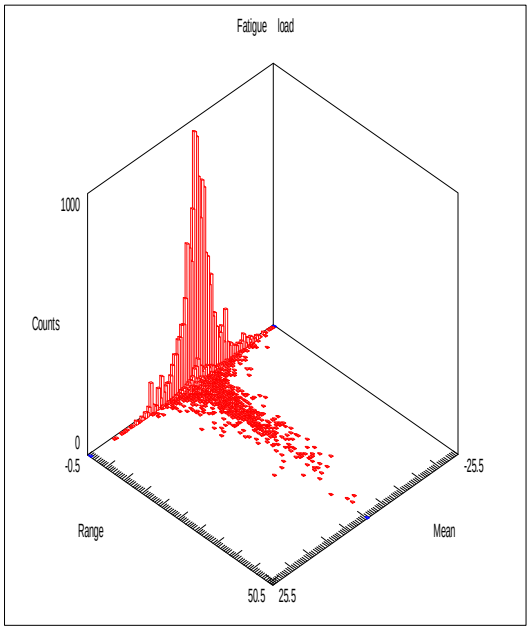
DIGASYS carries out following studies:

- measurement and calculation of the dynamic load of vehicles;
- determination of the fatigue load;
- evaluation of the vibration comfort;
- optimalisation of the structure;
- measurement of the dynamic stresses during track tests;
- measurement of more than 100 physical quantities simultaneously.



Mersurement of the dynamic deformations of a vehicle during track tests with 50 sensors simulaneously (SNCF – AGC regional train).



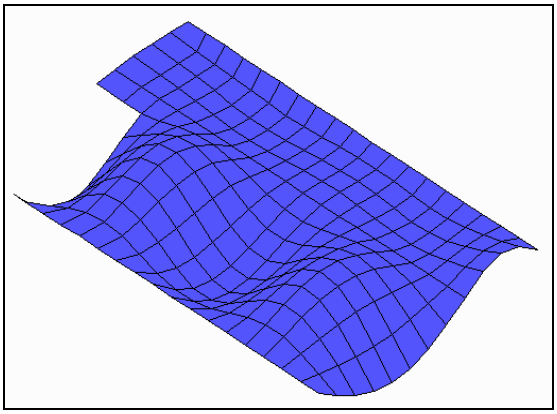


Determination of dynamic stress concentrations and prediction of the lifetime by means of 3 dimensional rain flow cycle counting techniques (part of automobile headlamp).

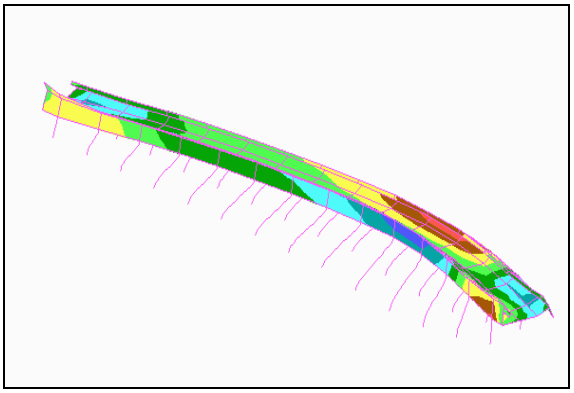
• Dynamical aspects of constructions

DIGASYS can advise you with:

- design of foundations and dynamic loaded floors;
- measurement of the natural frequencies of foundations and machines;
- measurement of dynamic forces in machine-foundation fixations;
- evaluation of damage on foundations due to high fatigue load;
- vibration propagation in soils;
- seismic analysis of bridges and buildings;
- vibration comfort en damage in buildings;
- lifetime prediction of pipelines;
- optimalisation of steel constructions.

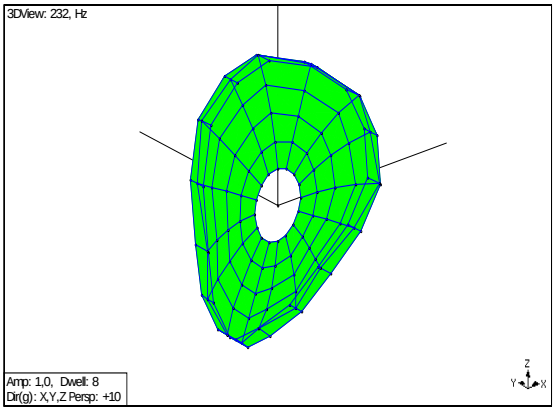


Determination of the dynamic deformations of floors due to rail traffic (railway station Ath)



Calculation of the dynamic stresses in a bridge during an earthquake (canal du centre-Houdeng – study performed for GTI Infra SA).

• Experimental modal analysis



Experimental determination of the natural frequencies and mode shapes of a drive train for a paper mill (study performed for Sappi Lanaken N.V.).

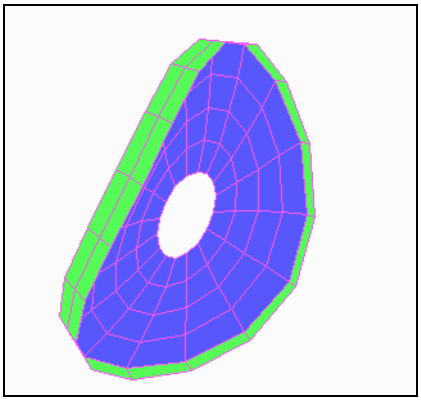
Analysis:

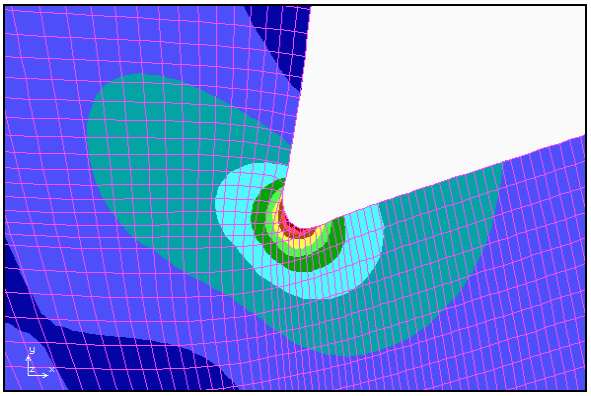
- measurement of natural frequencies
- determination of resonance's
- detection of weak spots
- measurement of dynamic stresses and residual lifetime

Applications:

- gearboxes
- machine foundations
- buildings
- railway vehicles
- parts of vehicles
- pipelines

• Simulations by means of finite element analysis





Simulation of resonance and resulting dynamic stresses

Analysis:

- prediction of resonances
- simulation of structural modifactions
- calculation of vibration levels
- determination of stress concentrations
- seismic analysis

Applications:

- gears
- machine foundations
- floors
- bogies for railway vehicles
- bridges
- piping