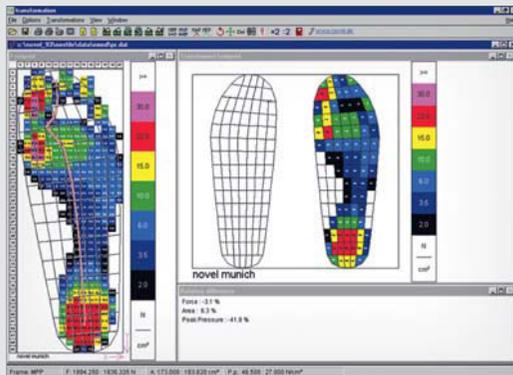## novel tools

The *tools* package includes special programs for data reduction, data analysis, and data transformation.

Programs included:

- 3D Viewer
- cycles
- differences
- Emascii
- file and value master
- force & area derivatives
- intruders
- transformation

Transformation of emed® platform data to pedar® in-shoe system

Features:

1. Depicts 3D scans with projections of pressure distributions
2. Separates cyclical loads into individual files
3. Calculates pressure difference between two data files
4. Produces emed® pressure data and hydrographs in format ASCII
5. Allows correction of pressure data due to artefacts
6. Calculates force and area derivatives
7. Allows reading of special ASCII pressure data
8. Transforms emed® platform measurements to systems with lower spatial resolution e.g. pedar® insoles

novel projects

The *projects* software allows the user to define individual projects as macros for automatic analysis of many parameters using the installed novel data evaluation programs.
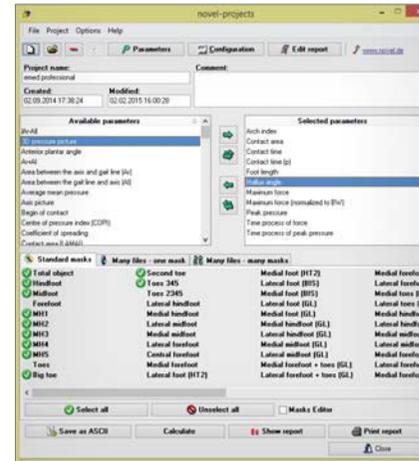
projects screen for selection of parameters

Features

1. *projects* can be designed specifically to the purpose of the data evaluation
2. *projects* allows comparison across patient's visits or within patient groups
3. The results of the calculations are presented as html reports
4. The results of the calculations can be stored in the database medical and there a basic test for statistical significant differences is implemented

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novel player

The *player* software synchronises pressure distribution data obtained from emed®, pedar®, and pliance® with several video sequences and files.

Features

1. Displays and stores many video and ASCII files synchronised with pressure data
2. Overlays dynamic foot pressure analysis with digital videos
3. Controls all dynamic analysis programs of novel
4. Produces an AVI file of all synchronised dynamic events for media players
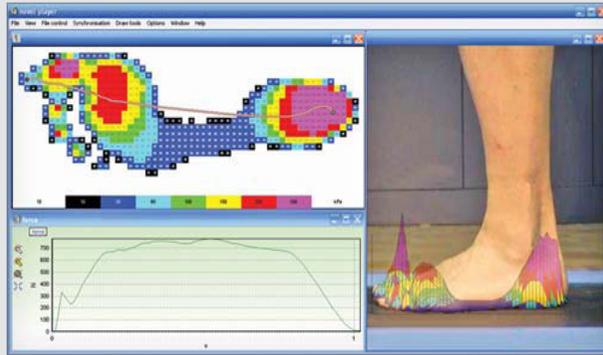
Video with overlayed 3D pressure distribution display
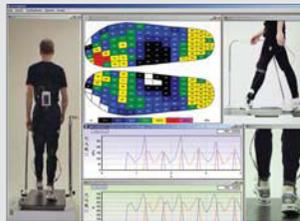
pedar® in-shoe measurement data synchronised with video files
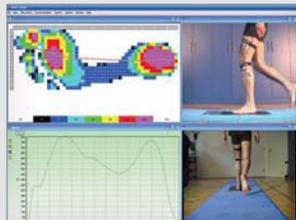
emed® platform data synchronised with video files

novel multimask

Groupmask evaluation of emed® platform measurement data files

The multimask package is used for the regional analysis of pressure distribution data obtained with emed®, pedar®, and pliance® systems.

Programs included:

- Automask
- Multimask and Group-mask Evaluation
- Emascii
- Average
- Step Phase

Features

1. Applies masks automatically to anatomical foot regions with detection algorithm
2. Applies defined masks of foot regions
3. Calculates various parameters across user defined foot regions
4. Calculates statistics for parameters such as mean value, SD or 95% confidence interval
5. Exports results in ASCII format
6. Calculates the average of pressure measurement data
7. Subdivides gait cycle in stance and swing phase (only pedar®)
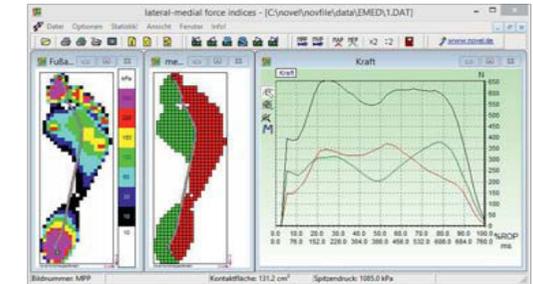
gaitline & geometry

The package *gaitline & geometry* includes programs for the analysis of the center of pressure line and the foot geometry.

Programs included:

- Lateral/medial area & force indices
- Velocity of the COP
- Regional velocity of the COP
- Geometry
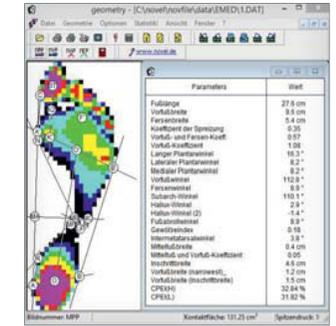
Plantogram parameters

Total, lateral, and medial forces

Features

1. Computes the time, speed, and distance of the center of pressure for the total foot and four foot regions (heel, midfoot, forefoot, and toes) separately
2. Calculates the velocity of the centre of pressure in x- and y-components
3. Calculates lateral/medial force and area indices and the corresponding derivatives
4. Calculates various plantogram parameters and characteristics angles