proEMG 2.0

prophysics is making waves

Prophysics is very proud to introduce proEMG 2.0 - the new major version of the premium Software package for recording, analysis and reporting of EMG date. The new version incorportates a large range of new functions, as well as a completely re-designed an streamlined interface designed to make your daily processing of EMG data as quick and easy as possible.

Immediate Integration

proEMG integrates with analog-to-digital conversion cards from National Instruments, Data Translation and Vicon. This means that the powerful processing and reporting functions in proEMG can be used to analyze data from a large number of hardware devices such as EMG, goniometers, accelerometers, force plates and strain gauges. Furthermore, proEMG has full read/write support for the C3D file format, making it easy to exchange data with a variety of 3D motion capture systems. There are two versions of proEMG: the stand-alone version incorporates capture and configuration functions that let you acquire and process all your data, whereas the Vicon plug-in version lets you combine all the functionality seamlessly with 3D motion capture.

Intuitive Interface

proEMG's user interface has been designed and continually improved to be clear, concise and intuitive. All key functionality is accessible with a minimal number of mouse clicks, and the workflow follows a natural path. The combination of graphical icons and text means that the interface is easy to navigate, and you don't have to search for functionality in obscure or hidden windows. Signal processing is done on-the-fly, so that you always see the current state of your data. Finally, should you need more help, there's a fully up-to-date user manual that describes and illustrates all the functionality.

Powerful Processing

proEMG incorporates a large number of signal processing functions, including filters, smoothing, Fast Fourier Transform, cross correlation, the Teager-Kaiser energy operator and the Wavelet transform. All of these can be combined and configured to meet your needs, and saved out as named processing schemes to be used later for one-click routine processing. Furthermore, events such as muscle onset/off or foot contact/off can be automatically identified and used to calculate interesting clinical or research parameters. Regardless of whether you want know when a muscle is active in a gait cycle, what the maximum angle measured by a goniometer is, or perhaps how the median frequency of a muscle's EMG signal develops over time, proEMG calculates this automatically.
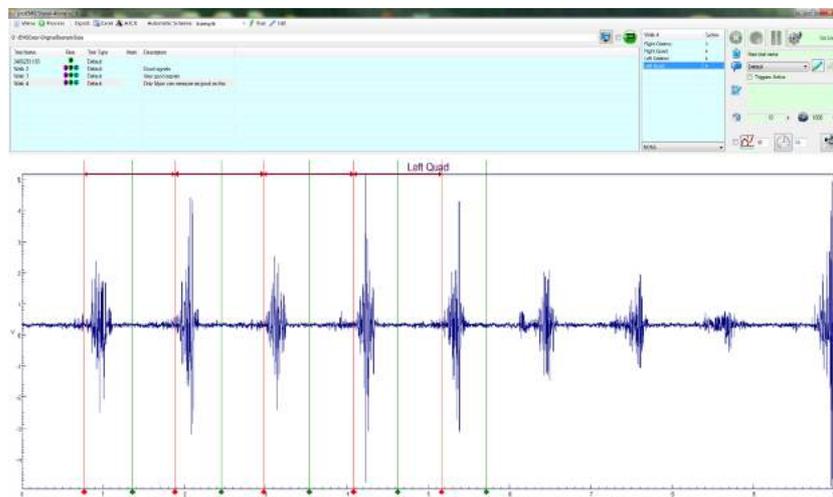
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Extensive Export

Once your data have been signal processed and your parameters calculated, proEMG gives you the export functions you need when you wish to use other software for further processing. You can, at the click of a button, export all your data directly to Microsoft Excel, or you can save it out as a text file for import to, for example, MATLAB. Furthermore, if you simply wish to use a graph in a presentation, you can also export the data as a bitmap.

Revealing Reports

proEMG lets you configure and generate reports directly in Microsoft Word. You first configure a template to accept data and parameters in graphs or bitmaps, and then use the template on a routine basis to generate subject-specific reports in seconds. After the report has been automatically generated by proEMG, you can quickly and easily edit text, print, email or save the report as a PDF file.

Wonderful Wavelets

proEMG is the first major EMG processing software to incorporate the Wavelet transform as a core processing option, which enables you to visualize and analyze both the timing and frequency information of the signal simultaneously. A colour-coded intensity graph clearly shows when the signal is active as well as in what frequency bands the activity is strongest, giving you valuable extra information about the dynamics of the muscle activity. The Wavelet transform is based on peer-reviewed scientific publications, and is optimized to the characteristics of a typical EMG signal.

Fantastic Functionality

proEMG has, since its first release in 2009, steadily added functionality as a direct result of extensive user feedback. This means that proEMG 2.0 now boasts a large number of powerful, yet user friendly functions designed to speed up your work. This includes the option of using a video camera to capture reference video, a muscle name library to simplify the setup procedure, a new data management tool that lets you organize your data systematically, the Teager-Kaiser energy operator which has been shown in the literature to improve automatic muscle onset/off detection, the ability to trigger start/stop capture to synchronize with other devices - and much, much more.

1) Von Tscharner, V. Time–frequency and principal-component methods for the analysis of EMGs recorded during a mildly fatiguing exercise on a cycle ergometer, Journal of Electromyography and Kinesiology 2002; 12: 479–492
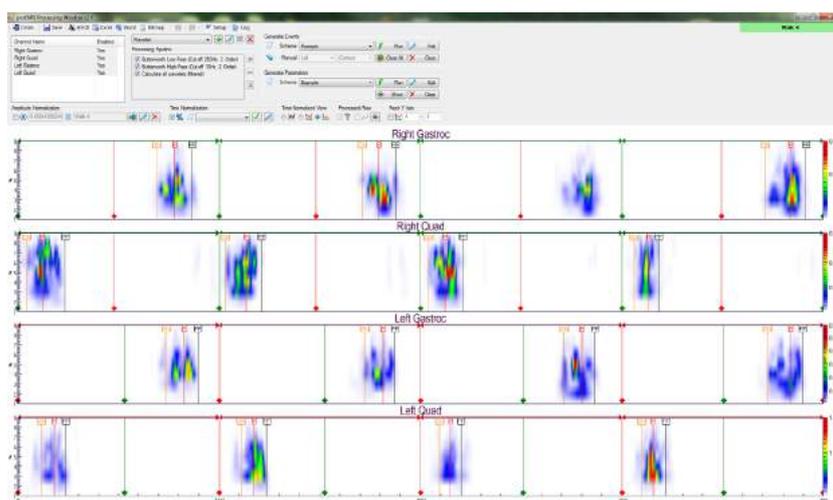
prophysics has since its foundation in 1996 focused on integrated solutions for measuring and analyzing motion in German speaking Europe. Software solutions have been developed for various customer needs, including the proEMG software. Due to proEMG's extensive functionality, positive user feedback and hardware independence, this software is now available worldwide for users of all EMG systems.