III CLAEB João Pessoa 2004

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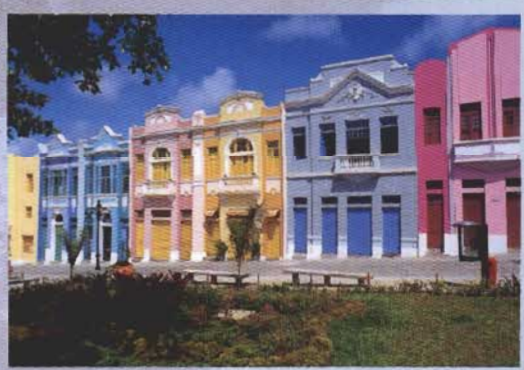

Livro de Resumos
Programa Científico

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sinc(*i*) Research Center for Signals, Systems and Computational Intelligence (fich.unl.edu.ar/sinc)
F. M. Martínez, J. Goddard, A. E. Martínez & H. L. Rufiner; "Analysis of Spanish Speech Signals using Higher Order Statistics"
Memorias del III Congreso Latinoamericano de Ingeniería Biomédica (IIICLAEB 2004), sep, 2004.

ANALYSIS OF HERAT SOUNDS USING BAYESIAN NETWORK.

Takashi Uozumi
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Abstract: Phonocardiogram was analyzed by the method of the artificial neural network (ANN) and the Bayesian network (BN). The former method is useful to discriminate a single target such as a mitral regurgitation only, but less accurate in the case of the complex malfunction of valves and has a drawback of its blackbox characteristics. In resent years, the Bayesian network has been applied to the audio and visual information analysis. In this work, time-amplitude information and time-frequency information were applied to ANN and BN systems. The causality network increased the fitness and provided access to causality, which is a variable that explains the results.

NEUROMONITOREO MÚLTIPLE DE LA AUTORREGULACIÓN DINÁMICA Y VASORREACTIVIDAD CEREBRAL EN PACIENTES CON NEUROINJURIA GRAVE.

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Abstract: Cerebrovascular reactivity is the protection mechanism against ischemia and hyperemia and it often suffer alterations in severe neuroinjuried patients. The authors study the spontaneous changes in dynamic autoregulation (AR) and cerebral vasoreactivity by evaluating the moving correlation coefficients Mx (Mean Index of Autoregulation) and PRx (Pressure Reactivity Index). Transcranial Doppler, ABP, ICP, and ECG signals are simultaneously processed by means of multichannel digitalization and custom developed software. The method's validation is made in patients of the Intensive Medicine Centre* with acute vascular or traumatic neuroinjury. Shortly, the evaluation will be extended to other important parameters like the critical closing pressure (CrCP) of the cerebral circulation.

ANALYSIS OF SPANISH SPEECH SIGNALS USING HIGHER ORDER STATISTICS.

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Abstract: The spectrogram is an efficient tool to visualize the spectral characteristics of the signal along the time axis; it is based on second-order statistics. Alternative representations could improve this one, for example, by showing 'hidden' elements hard to see in the spectrograms. Higher order statistic (HOS) analysis seems to be an interesting kind of signal analysis, but its problem is the lack of understanding of their properties while applied to speech signals. This work applies HOS analysis on Spanish synthesized and recorded signals. The current results on a reduced synthesized vocabulary show that some prosodic and coarticulatory clues can be obtained by applying third order statistics. Similar results are expected on a larger vocabulary with third and fourth order statistics.

BANDAS DE MÁXIMA RESPOSTA DO BAEP PARA DIFERENTES TAXAS DE ESTIMULAÇÃO.

Eduardo Azevedo, A. F. C. Infantosi
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Abstract: The brainstem auditory evoked potential (BAEP) of normal hearing adults was investigated in the frequency domain. The Magnitude Squared Coherence (MSC), a statistical spectral technique that involves magnitude and phase synchronism were applied for detecting the response for click stimulation of 85 dBnHL at rates of 1, 5, 20 and 40 Hz. The results indicated that maximum response bands and stimulation rate are closely related: increasing the rate implies a decrease in the relative importance of the MSC high-frequency band. This behavior is mainly noted in the short-latency intervals of BAEP.

SIGNAL POST-PROCESSING FOR COMMERCIAL HPLC EQUIPMENT.

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Abstract: In this work the processing for spectral signals from a commercial HPLC equipment are presented in a conventional way, i. e., the samples shown the several components in the spectrum like spikes and these represent main substances in it. For these samples we try to determinate the concentration of some kind of hormone. However, there is the possibility to have more than these spikes between them. The problem is caused by a bad signal process. That causes the undetermination of intermediate spikes. So, the way to obtain the intermediate spikes is by means of the Wavelet Transform, this technique is applied to all data in a post-processing and the spectral culd be shown the intermediate spikes. The processing is done using a personal computer and a computer program build by us.

INTEGRAÇÃO DE ESQUEMAS DE PROCESSAMENTO DE IMAGENS PARA AVALIAÇÃO AUTOMÁTICA DE MAMOGRAMAS DIGITALIZADOS.

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Abstract: In recent years, the automatic evaluation of digitized mammograms has been studied. The Computer-Aided Diagnosis (CAD) schemes has been developed from some pre-processing and processing procedures to microcalcifications, nodules and asymmetric masses detection, the objective is connect all procedures to automatize the scheme and facilitate the user practice. With this, the processing time of Regions of Interesting (ROI) is reduced and the user intervention is not necessary. Beyond, is be developed a friendly interface and all process was restructured based on documentation of each procedure. It optimized the scheme.

EFEITO DA EENM POR CORRENTE ALTERNADA DE 1kHz NOS MÚSCULOS FLEXORES DO PUNHO E DEDOS.

F. L. Gomes, A. S. Maluhy*, K. F. Pires**, A. F. Rocha***, F. A. O. Nascimento****