

AN AUTOMATED ATHLETE PERFORMANCE EVALUATION SYSTEM

From theory to practice

Hugo Silva, Gonçalo Martins, Susana Palma

*PLUX, Biosensor Engineering., Av. 5 de Outubro n° 70-8°, Lisbon, Portugal
{hsilva, gmartins, spalma}@plux.info*

Pedro Mil-Homens, Maria Valamatos

*Faculty of Human Kinetics, Lisbon, Portugal
{pmil, mjvalamatos}@fmh.utl.pt*

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Abstract: In order to obtain information on athletic performance, strength and power characteristics of the athlete are generally evaluated. However, due to the large number of variables needed for the assessment, this kind of evaluations is usually time consuming. Taking advantage of recent developments in the area of sensors and acquisition systems and using signal processing algorithms reported in the literature, we developed a new Athletic Performance Evaluation System. This system automatically determines evaluation parameters and integrates them in ready-made reports, decreasing the time involved in the evaluation process. The system is based on the installation of sensors and wireless acquisition systems at the assessment workstations of a Sports Evaluation Laboratory. At present, Jump Platform, Leg Press and Multipower workstations are being used. Strength and displacement data collected by the sensors at these workstations is automatically processed in real time at the Central Base Station where standard force and power related evaluation parameters are determined. Graphical representations of time evolution of the variables being measured by the sensors are showed in real time on the screen. Each evaluation session is defined by a protocol that can be specifically created by the coach for each athlete. The results of the evaluations are stored in an athletes' database so that the historic performance of the athlete can be easily assessed. The resulting system presents the deployment of sound theoretical evaluation metrics in a real time athlete performance evaluation system.