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THE SIMULATION MODELING OF THE TECHNIQUE IN TRACK&FIELD JUMPS

Introduction. The problem of reliability of competitive activity of an athlete includes several aspects, in particular the state of readiness and the realization of technical abilities in extreme competitive conditions, the interrelation between those aspects being very complex.

We have examined the process related to the execution of voluntary movements in accordance with the goals and the rules of competitions. To assess technical preparedness, we had to examine the changes and the stability of motor programs execution.

Within the frame of our research we have developed the system of models including the model of the locomotor apparatus and the model of the controlling system. To design the models we have used the concept of "biomechanism" (Seluyanov et al., 1995) and a new scientific trend called biocyberagogy (Shestakov M.P., 1998, 2000).

Methods. The computer complex consists of several modules: calculation of mass-inertial parameters of the athletes; calculation of kinematical and energetic characteristics of movements of separate body links and the whole body based on videotape processing.

Results. At present, this approach to the estimation of technical mastery is used by the complex scientific group working with the Russian national team in athletic jumps. The complex has proved its validity, being continuously used in the training process of 50 top class athletes during a year long cycle. Some individual peculiarities of the athletes' technique had been revealed that helped the coaches to correct the corresponding training plans.

Conclusion. The new information technologies allow to create the systems for simulation modeling of the technique of concrete movements at the level being necessary and sufficient for the estimation of the competitive activity of an athlete taking into account his (her) individual peculiarities.

References .

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