

## Multicriterion statistical extrapolation for a preset prediction in performance sport

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### Summary

The present paper presents the issues related to the dynamic series adjustment in order to determine the probability to reach preset values of performance, in the stated period of time and of known statistical chronological series. So, with trend functions, one can approximate the variation tendency in time of the sportive performance parameter, the difficulty being, though, the weight of each dynamic series of statistical data in the probability evaluation of performance. Each dynamic series represents values of the physical and physical tests monitored over a training phase, so over a stated period of time. Based on the structural analyses of the data, the type of the trend curve was chosen, in order to be used in the adjustment operation, having the following form:  $y_i = f_j(t)$ . The proposed method is based on the statistical extrapolation for determine the weight of the different criterions of probabilistic evaluation of the desired sportive performance. The yield of probability will be determined as a sum of probabilities composed based on the weights, for a preset prediction, of the statistical extrapolation trend functions.

The proposed algorithm will develop respecting the following general phases:

- first, the physical, technical and psychical tests are set, being statistical variables of analysis, based on classical statistical criterions (for example, the t-test criterion)
- for each statistical variable and for the chronological series, respectively, the trend function will be determined
- one of the adjustment methods of the dynamic series will be applied to determine the theoretical factors of the experimental chronological series; the theoretical coefficients of the trend functions will describe better the tendency of development of the analysed variable;
- the analysed variable are extrapolated for the preset time yield;
- the weight of the extrapolated variables are set, necessary for the calculation of the composed probability
- the composed probabilities corresponding to different time yields are calculated, resulting o probability domain.

The present paper could be found useful for coaches in training performance sportive in individual sports.

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