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*Optimal Allocation of Energy Resources for Athletes in Bicycling, Running, Skiing and Swimming
Competition as a Time Optimal Control Problem.*

We investigate the multi-staged optimal control for the best allocation of aerobic and anaerobic energy resources by cyclists, long distance runners, skiers, and swimmers. We consider the problem of getting the best finish time for long distances as well the problem of getting the best possible outcome in a series of events of the same kind, such as preliminary, semis, and finals of one tournament. (Received September 27, 2005)