

MEMORANDUM



To: Tennis Coaches and Players

From: A MCM Team

Subject: Sincere Recommendations from Momentum Modeling

Date: Tuesday, February 6th, 2024

In tennis, the momentum effect refers to a phenomenon where a player who wins a point, hits a crucial shot, or delivers another outstanding performance gains a psychological advantage over the opponent, thus boosting confidence and performance. It can also be understood as "success breeds success." The dictionary defines momentum as "strength or force gained by motion or by a series of events." Research indicates that momentum significantly influences match outcomes, and players often leverage momentum to achieve a series of successful matches.

In the modeling process, we explored many conclusions about momentum, hoping to inspire and assist in your training.

Coach's Recommendations:

(1) Swings of Match flow and runs of success are not random, so the influence of momentum should not be ignored during matches. Strengthening attention to momentum is necessary.

(2) At a specific moment in the match, our time-series model can capture and output real-time final winning probability information of the player based on previous match data, and this prediction result has high confidence. Therefore, when the real-time predicted winning probability is too low, it is advisable to make appropriate choices in the match, ensuring the conservation of energy.

(3) At a specific moment in the match, it is possible to make real-time predictions of momentum fluctuations and turning points based on previous match data. This is advantageous for timely prediction and prevention of potential adverse effects (such as a continuous decline in momentum).

(4) Considering the impact of momentum, psychological resilience training for players can be incorporated into regular training sessions.

Player's Recommendations:

(1) Train players to maintain focus and composure, regardless of individual scores or match results. This involves some techniques such as concentration, visualization, and positive self-talk to maintain mental strength and focus during matches.

(2) Ensure physical readiness to maintain high intensity and focus during matches. Proper adjustments, such as appropriate halftime breaks and adjustments, can help maintain performance levels even in the face of momentum fluctuations or fatigue.

(3) Momentum Management: Encourage players and coaches to actively monitor specific indicators reflecting match momentum, such as score differentials and effective use of serve rights.