# RETURN TEMPORAL ANTICIPATION ON THE BASIS OF THE BALL TRAJECTORY ESTIMATION IN TENNIS

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## ABSTRACT

*Ball-hitting in tennis involves spatio-temporal information about the ball's flight trajectory. We have focused on the temporal part of the information during returning a tennis serve that was simulated by a ball machine or real server. The aim of this study was to examine the effect of partial ball flight trajectory occlusion on the correct return timing. The tested people had tachstoscopic glasses placed on their head, which occluded their vision at the exact time, when the ball was being sent from the ball machine or real server. The tested person did not know which part of the ball flight trajectory would be occluded, nor the ball speed. The analysis revealed that the greatest problems occurred while the second third of the ball flight trajectory had been occluded and the subjects reached most temporal errors at that time. The information of the ball impact place with the court is not the only crucial thing, but the information about the initial part of the ball trajectory after the ball bounces is also crucial. The last third of the ball trajectory is not important for the stroke timing and the player doesn't have to focus his vision on this last part of the ball trajectory.*