

STRATEGIES IN ALPINE SNOWBOARD PARALLEL GIANT SLALOM - A GNSS FIELD STUDY WITH THE SWISS NATIONAL TEAM

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Keywords: snowboard, alpine, GNSS, parallel, strategy

INTRODUCTION: Many factors influence performance in alpine snowboarding. Until now, only very few have been scientifically researched. The aim of this study was to investigate the influence of known factors on performance from alpine skiing in alpine snowboarding. For example, the curve phase distribution and the turn radius were examined.

METHODS: Using global navigation satellite systems (GNSS), 212 training runs with a total of 3716 turns were recorded in trainings of the Swiss Snowboard World Cup team in the 2020/2021 season (♀ = 5; ♂ = 3). The course setting characteristic was measured in each training session using RTK GNSS sensors.

RESULTS: Concerning the influence of the turn phases, no significant difference were found. In flat and medium slopes, the larger the smallest radius of the turn was, the better (lower) the time for this section was. This difference has occurred in the female group. The speed of the athletes was lowest in steep terrain and became higher the flatter the slope was. While speed was increasing on average in toe-edge curves ($M = 0.92$ km/h, $SD = 2.73$, $n = 1898$), a loss of speed resulted on average in heel-edge turns ($M = -1.26$ km/h, $SD = 2.71$, $n = 1814$), $t(3710) = 24.372$, $p < .001$.

DISCUSSION/CONCLUSION: In contrast to alpine skiing, it seems that under certain circumstances, maintaining speed with a larger minimum turn radius is more important for a good performance (short run time), than aiming for a long gliding phase. The differences found between toe and heel edge turns are very clear. This knowledge can serve as a basis for developing technique, strategies as well as equipment in the sport.