インソールセンサによるリップスティックユーザの動作特徴抽出と
リップスティック滑走技能学習支援

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The purpose of this study is to analyze the changes in the user's foot pressure while skating on the Rip-stick, and to analyze the standard of posture and movement of different users. By analyzing the data and experience gained, the study aims to provide guidance for beginners to learn how to skate on the Rip-stick.

In this study, three courses were designed to test and record the skating data of users of different levels. Course 1, Course O, and Course S. They test the users' basic skating ability, basic turning ability and continuous turning ability respectively. It was hoped that these three routes would be used to obtain data that would distinguish novices from experts. A total of ten volunteers were recruited to complete the test, and 10, 5 and 5 sets of data were collected on the three courses respectively.

By capturing the pressure output from the bottom of the user's feet while skating, the pressure is combined with time to generate a time domain graph of the user's pressure changes while skating. The time domain pressure data is then analyzed through Fourier variation to analyze the user's movement and stability while skating. In the end, more adequate skating data and conclusions were obtained in group 1. 1 group illustrates that when gliding, the amplitude of human movement needs to be maintained within a stable range in the horizontal direction in order to have a higher quality of stable gliding. In group O, because the overall course overlap with group 1, there was little difference in the resolution of the frequency domain maps, and only a relatively simple conclusion was obtained. Witch is, slightly different from the imagination when the Rip-stick skating needs to turn, the human foot and the board body will be tilted towards the direction of the turn. Group S, on the other hand, did not end up with valid, informative conclusions because the collected data were less suitable for Fourier transform analysis.

At this stage, due to the limitations of time, volunteers, and analysis methods, there are still many imperfections and poor considerations in this study's experiment. In the future, we need to design more targeted routes to test the gliding data under different conditions. In addition, only one method, the Fourier transform, was used to analyze all the data. In the future, more different analysis methods are needed to analyze the corresponding data in order to get the most ideal results.