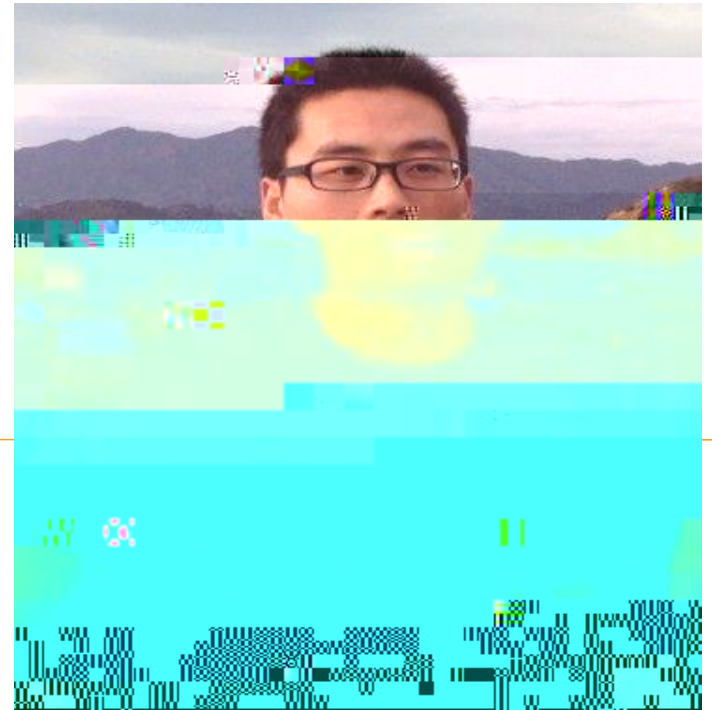


REVIEWING EFFECTIVENESS OF ANKLE ASSESSMENT TECHNIQUES FOR USE IN ROBOT-ASSISTED THERAPY

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Aim

Method

- Selected 76 publications (published Jan 1980–Aug 2013) from 8 databases.
- Divided publications into 2 main categories:
 - 16 qualitative and 60 quantitative studies.
 - 13 goniometer, 18 dynamometer, and 29 innovative technique studies.

Results

- 465 subjects participated in 29 quantitative studies of innovative measurement techniques that may potentially be integrated in real-time monitoring device.
- Qualitative ankle assessment methods are not suitable for real-time monitoring in robot-assisted therapy, though they are reliable for certain patients.
- Quantitative ankle assessment methods show great potential.

CONCLUSION

Majority of quantitative techniques reliably measure ankle kinematics and kinetics but are usually available only for use in sagittal plane.

Limited studies determine kinematics and kinetics in sagittal, transverse, and frontal planes, where motions of ankle joint and subtalar joint actually occur.