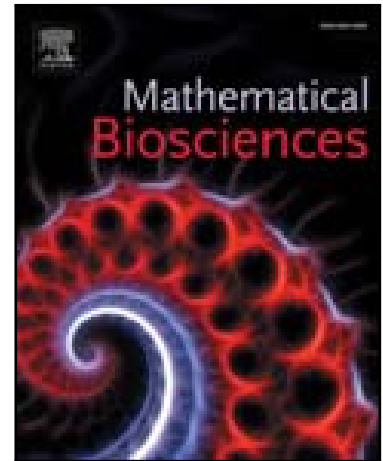


## Accepted Manuscript

A Poincare Map Based Analysis of Stroke Patients' Walking after a Rehabilitation by a Robot



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PII: S0025-5564(16)30214-0  
DOI: [10.1016/j.mbs.2018.03.001](https://doi.org/10.1016/j.mbs.2018.03.001)  
Reference: MBS 8032

To appear in: *Mathematical Biosciences*

Received date: 4 October 2016  
Revised date: 6 October 2017  
Accepted date: 2 March 2018

Please cite this article as: Mohsen Abedi , Majid M Moghaddam , Davoud Fallah , A Poincare Map Based Analysis of Stroke Patients' Walking after a Rehabilitation by a Robot, *Mathematical Biosciences* (2018), doi: [10.1016/j.mbs.2018.03.001](https://doi.org/10.1016/j.mbs.2018.03.001)

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## Highlights

- To simulate the walking of stroke patients by considering the effect of interhemispheric imbalance;
- To obtain the Poincare map of walking for intact cases, hemiplegic persons and patients experiencing a rehabilitation program;
- To approve by the Poincare map analysis that why a stroke reduces the stability of motion;
- To prove that a rehabilitative robot using an impedance controller improve the stability;
- To show the reasonable performance of an impedance controller in treating patients by simulation and experiments;

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