In this paper the modified identification method for nonlinear systems is proposed based on Recurrent Spiking Neural Networks (RSNN). Spike Response Model (SRM) has been employed in the modification method. The learning of the parameters of RSNN is based on modified backpropagation algorithm which is known as SpikeProp. In the identification of a variety of types of nonlinear systems, a coding equation is applied to convert real numbers into spike times. The RSNN structure is tested for the identification of the nonlinear systems. The simulation results show that the proposed modification method provides a good performance in terms of execution time and minimizing error in the training phase.

References

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**Index Terms**

- Computer Science
- Artificial Intelligence

**Keywords**

- Spiking Neural Networks
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- Nonlinear systems
- SpikeProp