Reconstruction for limited-data nonlinear tomographic absorption spectroscopy via deep learning

Jianqing Huang , Hecong Liu , Jinghang Dai , Weiwei Cai

PII: S0022-4073(18)30280-2
DOI: 10.1016/j.jqsrt.2018.07.011
Reference: JQSRT 6160

To appear in: *Journal of Quantitative Spectroscopy & Radiative Transfer*

Received date: 23 April 2018
Revised date: 26 June 2018
Accepted date: 15 July 2018

Please cite this article as: Jianqing Huang , Hecong Liu , Jinghang Dai , Weiwei Cai , Reconstruction for limited-data nonlinear tomographic absorption spectroscopy via deep learning, *Journal of Quantitative Spectroscopy & Radiative Transfer* (2018), doi: 10.1016/j.jqsrt.2018.07.011

Highlights

- A new inversion method based on convolutional neural networks for nonlinear tomographic absorption spectroscopy is demonstrated.
- The effects of network parameters on the performance of neural networks are investigated.
- Comparison between CNN and SA is investigated and CNN shows better noise immunity and higher computational efficiency.