LSGI RESEARCH SEMINAR

Directional Reflectance Modeling of Remote Sensing Signals

📅 **2 DEC 2024 (MON)**

🕐 **3:30 - 4:30 PM**

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🌐 **MANDARIN**

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ABSTRACT

Ground surface reflection often shows significant directional effects. It may change with both solar and viewing angles. Understanding the bi-directional reflectance characteristic is particularly important in remote sensing applications. Lots of physical models were developed to explain the bi-directional reflectance of remotely sensed pixels since 1970s. However, universal models are still absent for vegetation covered land surface. In this presentation, after a brief introduction to the concept of bi-directional reflectance, three types of classic physical models will be reviewed with their advantages and limitations. A recently published physical model named PATH-RT will be shown in detail. The new model is developed based on the analytical expressions of sunlit and shaded proportions of vegetation and soil. By using a simple path length distribution which is easy to be measured from remote sensing data, PATH-RT can greatly remove the assumptions and limitations of previous models. As a result, it is capable of predicting remote sensing signals accurately and efficiently for various vegetation canopies.

BIOGRAPHY

Guangjian Yan is a professor at Beijing Normal University, Deputy Director of the State Key Laboratory of Remote Sensing Science, associate editor for Journal of Remote Sensing, Executive Deputy Director of Quantitative Remote Sensing Professional Committee, China Association of Remote Sensing Application. His research interests include multi-angular remote sensing, radiation budget, vegetation radiative transfer modeling, biophysical variables retrieval and validation. He has been principal investigators of Key Program of National Natural Science Foundation of China, the National High Technology Research and Development Program (863 Program) and the National Basic Research Program of China (973 Program). He has won 6 provincial and ministerial-level science and technology awards and published over 300 papers. He was continuously ranked as the World's Top 2% Most-cited Scientists since 2021. His contributions played important roles in the validation system of UAV remote sensing payloads and remote sensing field campaigns in China.

Moderator: Dr Xiaolin ZHU, LSGI

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