



# The 15<sup>th</sup> Lecture Series by Academicians from the Chinese Academy of Engineering (CAE)

Jointly Organized by  
Department of Geography and Resource Management  
Office of Academic Links (Mainland and Regional)

**Speaker:** **Prof. LI Qingquan**  
Division of Civil, Hydraulic and Architecture  
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Chinese Academy of Engineering  
中國工程院土木、水利與建築工程學部李清泉院士



**Title:** 熱帶森林碳抵消的過度信用與收益  
**Overcrediting and benefits in tropical forest carbon  
offsetting**



**Date:** Wednesday, 19 November 2025

**Time:** 15:30 – 17:00

**Venue:** NAH 12, G/F, Humanities Building, New Asia College

**Registration:** [http://www.cuhk.edu.hk/cneo/cae\\_2025/](http://www.cuhk.edu.hk/cneo/cae_2025/)

## Biography

Professor LI Qingquan currently serves as the chairman of the university council of Shenzhen University, vice president of the Chinese Society for Geodesy, and vice president of the International Society for Urban Information. His research focuses on innovative theories and autonomous equipment for dynamic precision measurement of infrastructure service state, which involves the integration of surveying and mapping, civil engineering, information, and other related disciplines. His research has been widely applied in the highway, railroad, subway, water conservancy, and other industries across 32 provinces and autonomous regions in the country. This has led to the advancement of innovation in the discipline and the establishment of an internationally leading position in dynamic precision engineering measurement. Furthermore, he has published 260 SCI-indexed papers, with over 20,000 citations and an H-index of 76, and has been included in the "Lifetime Scientific Influence Ranking" by Stanford University.

## Abstract

Tropical forest conservation is critical to global carbon emission reduction and neutrality, with annual emissions from forest loss and degradation hitting 5 billion tons—second only to fossil fuels. Leveraging multiple synthetic control methods, multi-source remote sensing/geospatial big data, and randomized experiments, we developed a transparent, reliable dynamic baseline method for REDD+ projects, incorporating time-varying deforestation risks and spatio-temporal matching algorithms. Applying this method to 52 voluntary REDD+ projects across 12 tropical countries, we accurately quantified their climate benefits at project and regional scales. Results show tropical forest carbon offsets deliver partial gains amid persistent over-crediting, with ~13.2% of tradable credits supported by counterfactual analysis; effectiveness is regionally variable, with Brazil and Africa outperforming others. Though systematic over-crediting persists, our assessed climate benefits exceed previous findings—this is vital for reviving the sluggish voluntary carbon market and advancing voluntary emission reductions. Enhancing baseline methods, certification transparency, and review/accountability mechanisms is key to boosting forest carbon offsets' credibility and benefits.

**Language:** Putonghua

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