附件1

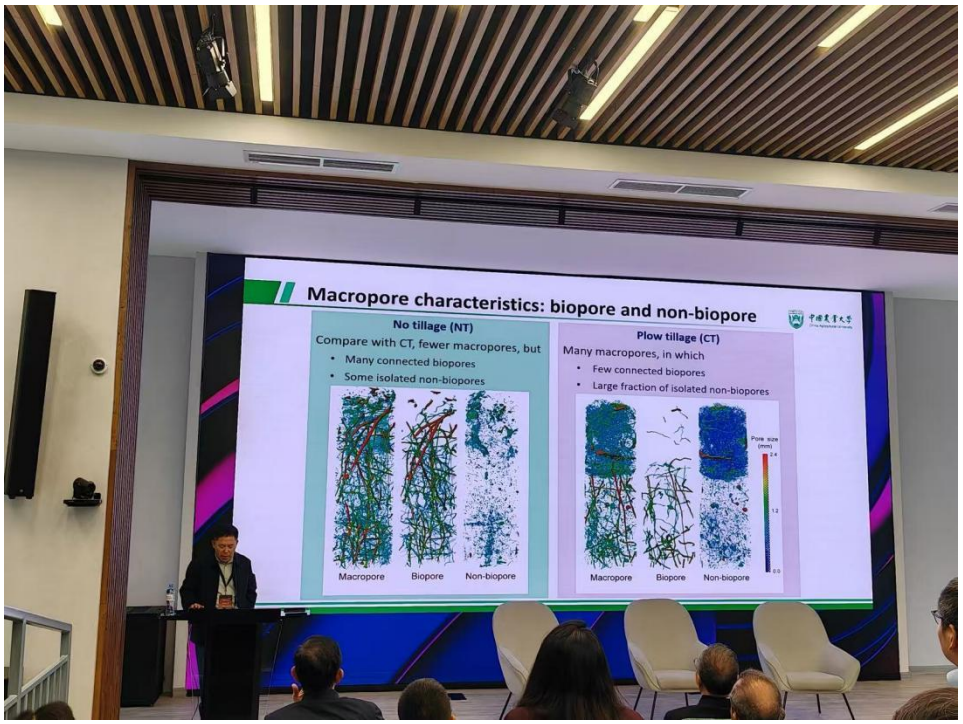
土地学院任图生出访总结报告

2026年9月5日至2026年9月12日，Soil health and stability under climate change分论坛在俄罗斯莫斯科举行。任图生教授应邀参会并作学术报告。

会议期间，任图生教授在大会专题研讨会上作了题为“No-till farming: A viable option for sustainable agriculture in the black soil region of Northeast China”的学术报告，系统阐述了免耕技术在东北黑土区农业可持续发展中的重要作用。该技术通过减少土壤扰动和秸秆覆盖，有效改善土壤结构与水热环境，降低水土流失，并促进作物稳产增产和资源高效利用。报告内容引起了与会各国学者的高度关注和热烈讨论。

此次会议为教师拓宽科研视野、深化研究内涵提供了重要契机，通过与世界顶尖专家的直接交流，获取了领域内最新研究动态与技术方向，深化了对关键科学问题的理解，为未来研究方向的凝练和高水平国际合作项目的开展奠定了坚实基础，并为进一步开展高水平国际合作交流奠定了坚实基础。

Intensive farming system: the driver of black soil degradation
Soil loss due to erosion;
Reduction of SOM and fertility;
Break down of soil structure;
Loss of biodiversity
.....
Harvest
Baling
Spring
Plow/ridging
Intensive disturbance (7-8 times)
Year-round bare soil surface
Rare organic fertilizer input
Seedling
Spraying
Packing
Planting


Macropore characteristics: biopore and non-biopore
No tillage (NT)
Compare with CT, fewer macropores, but
Many connected biopores
Some isolated non-biopores
Macropore
Biopore
Non-biopore
Plow tillage (CT)
Many macropores, in which
Few connected biopores
Large fraction of isolated non-biopores
Pore size (mm)
Macropore
Biopore
Non-biopore