



MNGD

MAKING NETWORKS FOR GLOBAL DEVELOPMENT

Host and Organizer: SATREPS-JST MNGD Project

International Student Workshop

20TH JUNE 2023

16:00-18:10 (JAPAN TIME) / 10:00-12:10 (ETHIOPIA TIME)

ONLINE(ZOOM)

Program

* 20 minutes presentation and 20 minutes discussion.

16:00 (JST) Opening Remarks

10:00 (EAT)

16:05-16:45 (JST)

10:05-10:45 (EAT)

Evaluating the performance of fine shredded paper and lime stabilized clay soil

Teshome Birhanu Kebede (Kyoto University / Addis Ababa Science and Technology University)

16:45-17:25 (JST)

10:45-11:25 (EAT)

Human Labor Based Road Construction Practices by the Limal Budin (a sub-kebele) in South Aari Woreda

Kassahun Yemane (Kyoto University / Jinca University)

Current status of enset local knowledge among households in three kebeles in South Aari Woreda, South Omo Zone, Ethiopia

Argachew Bochena Elisi (Kyoto University / Jinca University)

18:05 (JST)

12:05 (EAT)

Closing Remarks

18:10 (JST)

12:10 (EAT)

Close

Abstract

Evaluating the performance of fine shredded paper and lime stabilized clay soil

Teshome Birhanu

Ph.D. Candidate, Department of Civil and Earth Resources Engineering, Kyoto University, Kyoto, Japan /
Chief Research Assistance in Geotech laboratory, Addis Ababa Science and Technology University, Addis Ababa, Ethiopia

Problematic soil is commonly found in some parts of the world. Where such subsoil is prone to excessive settlement when subjected to loads over time. This settlement can result in an uneven settlement of foundations and subgrade, leading to structural damage of express roads, cracks in walls, and other issues which cause functional and economical loss. The treatment of this soil helps prevent or minimize such settlement and damage that allows the construction of buildings and infrastructure on land that would otherwise be unsuitable, maximizing land use and accommodating the growing population and urbanization.

To counter measure such problems different kinds of additive utilized by different researcher across the world. For this study our research group used a combined lime and fine shredded paper (i.e FSP) to enhance engineering properties of clay soil. The specimen is made from FSP, lime and Kasaoka clay at different percentage of additive.

Laboratory tests are conducted to determine the geotechnical properties of the treated clay soil, including physical, mechanical and hydromechanical characteristics. The standard laboratory tests mainly evaluate their strength, stiffness, and durability, and hydraulic conductivity of treated specimen.

Utilizing the PLAXIS 3D software, advanced finite element simulations are performed to analyze the behavior of the stabilized clay soil.

