DIEGO

SEBASTIANI

GEOTECHNICAL ENGINEER

Contacts

Education

Structural and Geotechnical Eng. Ph.D.
Student at Sapienza, University of Rome

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II level Master in Geotechnical Design
Sapienza, University of Rome
Tunnels & Deep Excavation course attendance

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Master of Science in Civil Engineering
Sapienza, University of Rome
"Efficiency study about soil conditioning for mechanized tunnelling for Milan Metropolitan Line M5 project"

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Bachelor in Civil Engineering
Sapienza, University of Rome
"Hydraulic and structural study on Sterpeto dam in Civitavecchia municipality"

Objective

I am a civil geotechnical engineer with years of research experience in the field of geotechnical engineering.
I am currently involved in experimental activities, on-site operations management, monitoring data analysis, design, restoration and recovery of damage during tunnelling operations in collaboration with Contractors, Chemical Suppliers, Engineering Companies, Universities and other Research Bodies worldwide.

Diego Sebastiani is a geotechnical Engineer from Sapienza University of Rome.

He is co-Founder of GEEG, an innovative startup aimed at sharing with Contractors, Engineering Companies, Chemical suppliers, Designers and Consultants the results of years of applied research for engineering applications.

He is Editor of the Journal "Gallerie e Grandi Opere Sotterranee", member of the Italian Tunnelling Society (coordinator of Young Member group, member of WG2 "Research" and WG14 "Mechanized tunnelling"), Lecturer on the II level Master in Geotechnical Design, technical manager of several Research Projects at Sapienza University of Rome and at GEEG involving engineering projects worldwide (as Milan, Rome, Bucarest, Santiago of Chile and London metropolitan lines).

He developed deep multidisciplinary knowledge on the use of chemicals in mechanized tunnelling excavation, in the design and construction of Tunnel Boring Machines, in the analysis of monitoring data and on the environmental management of spoils.

As geotechnical researcher he is currently involved in experimental activities on the mechanical behaviour of soils, on the relation between the features of soil particles and strength/compressibility behaviour, on the chemical treatment of soil and on environmental impact evaluations.

International Research groups

Diego contributes, as member, to the activities of:
ITA-AITES / SIG – "Working Group 2: Research", "Working Group 14: Mechanized tunnelling" and "Working Group 15: Underground and Environment".

Diego is co-author of the international publication: "Damages of segmental lining".

Research experiences

Sapienza, University of Rome 2018 - date

Diego is currently responsible for the development of preliminary studies of chemical products and dosages to be used for the soil conditioning operation of the soils involved in the mechanized excavation of the tunnels in the Rome Metro C line Project.

Diego's role involves the design, the execution, the data controls of the experimental activities developed to test and compare the effect of different chemicals, the site inspections and the analysis of the TBM monitoring data during the excavation.

- experimental activity
- on-site TBM control
- TBM data analysis

GEEG Startup di Sapienza, University of Rome 2018 - date

Diego is currently responsible for several Research Projects on the development and use of several chemicals (foaming agents, greases, backfilling grouts, polymers) from the main worldwide suppliers for tunnelling applications.

- chemicals
- TBM soil conditioning
- TBM performances

Sapienza, University of Rome 2014 - date

I wish to be involved in design and management activities in tunnelling projects.

Skills

Civil engineering
Geotechnical engineering
Tunnelling
Tunnel Boring Machines
Chemicals injection
Environmental impact
Site operation management
Monitoring activities management
Experimental activities

Associations

Member of the Italian Tunnelling Society (SIG)

Conferences & Courses

ITACET Course – Mechanized Tunnelling Rome 2016

XV Arrigo Croce Lecture of the Italian Geotechnical Association – Rome 2016

Workshop - Practical Injection Workshop for Underground Costruction (BASF) – Hagerbach (CH) 2017

Italian Geotechnical Association (AGI) Annual Congress (from 2017 to date) – Rome

World Tunnel Congress 2017 – Bergen

Arrigo Croce Lecture of the Italian Geotechnical Association – (from 2017 to date) Rome.

Adolfo Colombo Lecture of the Italian tunnelling Association – (from 2018 to date) Milan.

STUVA International Congress 2017 Stuttgart

World Tunnel Congress 2018 – Dubai (EAU)

SETAC Annual Meeting 2018 – Responsible and Innovative Research for Environmental Quality

RemTech 2018 – Management of soils and rocks from excavation

SAIE 2018 - Tunnelling 4.0: Digital Innovation, Automation and application of New Technologies in Tunnelling and Underground Construction

World Tunnel Congress 2019 – Naples (Italy)

European Conference on Soil Mechanics and Geotechnical Engineering 2019 – Reykjavik (Iceland)

technical visits

Variante di Valico – Sparvo Tunnel

Milan Metro M5 line Project

Diego performed studies of the effectiveness of chemicals for tunnelling application, management of tunnel excavation with TBM-EPB, studies of the environmental impact of the project of soil reuse.

- TBM management
- environmental impact studies
- experimental activities

Geotechnical Engineer 2016 - 2018
Sapienza, University of Rome – National Research Council

Experimental activity for the management of the mechanized excavation process with TBM for the Railway node of Florence (Nodavia).

- TBM management
- environmental impact studies
- experimental activities

Publications

The following a selection of publications.

1. D. Sebastiani, S. Miliziano, E.Campa, C.Umiliaco: Condizionamento di terreni a grana grossa nello scavo di gallerie con TBM-EPB: il caso della linea metropolitana M5 di Milano.
2. Miliziano, S., de Lillis, A., & Sebastiani, D. (2016). An integrated approach to the management of soils and rocks from excavations for a proper use of the territory and for landslides prevention. Geam – Geoingegneria Ambientale e Mineraria, (148), 53-60.
3. Sebastiani, D., Passeri, D., Belardi, G., & Miliziano, S. (2016). Experimental study of coarse soil properties influencing soil abrasivity. Procedia Engineering, 158, 9-14.
4. Sebastiani, D., Di Giulio, A., & Miliziano, S. (2017) La gestione del condizionamento del terreno nello scavo meccanizzato di una galleria con TBM-EPB: risultati di una attività sperimentale.
5. Vilardi, G., Sebastiani, D., Di Palma, L., and Miliziano, S. (2017). Study on the environmental impact of chemicals used in mechanized tunneling techniques. Proceedings of the World Tunnel Congress 2017 – Surface challenges – Underground solutions. Bergen, Norway.
6. Sebastiani, D., Ramezanshirazi, M., Di Giulio, A. and Miliziano, S. (2017). Study on short and "long term" effects of chemicals on fine grained soils for mechanized tunnelling conditioning. Proceedings of the World Tunnel Congress 2017 – Surface challenges – Underground solutions. Bergen, Norway.
7. Vilardi, G., Sebastiani, D., Miliziano, S., Verdone, N., & Di Palma, L. (2018). Heterogeneous nZVI-induced Fenton oxidation process to enhance biodegradability of excavation by-products. Chemical Engineering Journal, 335, 309-320.
8. Sebastiani, D., Guida, G., Casini, F. & Miliziano S. (2018). Studio dell'abrasione nello scavo meccanizzato di gallerie. Incontro annuale dei Ricercatori di Geotecnica.
9. Di Giulio, A., Sebastiani, D. & Miliziano, S. (2018). Effect of Chemicals in Clogging Risk Reduction for TBM-EPB Application. Proceedings of the World Tunnel Congress 2018 - The Role of Underground Space in Building Future Sustainable Cities. Dubai, EAU.
10. Sebastiani, D., Miliziano, S., Ginanneschi, R. & Zanetto, R. (2018). Effectiveness of Foam Injection during Mechanized Excavation of Tunnels with TBM-EPB Technology. Proceedings of the World Tunnel Congress 2018 - The Role of Underground Space in Building Future Sustainable Cities. Dubai, EAU.
11. Pirone, M., Vilardi, G., Bavasso, I., Sebastiani, D., Di Giulio, A., Di Palma, L., Carriero, F., Sorge, R. & Miliziano, S. (2018). Studi sulla compatibilità ambientale degli agenti condizionanti per il riutilizzo del terreno prodotto dallo scavo meccanizzato di gallerie. Gallerie e Grandi Opere Sotterranee, 127.
12. Pirone, M., Sebastiani, D., Carriero, F., Sorge, R., Miliziano, S. & Foti, V. (2019). The management of the soil conditioning process for the excavation of the Rome Metro C line. Proceedings of the World Tunnel Congress 2019 - Tunnels and Underground Cities: Engineering and Innovation meet Archaeology, Architecture and Art. Naples, Italy.
13. Vilardi, G., Bavasso, I., Sebastiani, D., Miliziano, S., Di Palma, L., Pirone, M., Carriero, F. & Sorge, R. (2018). Influence of bacteria inoculum and organic concentration on the biodegradation of soil conditioning agents in aqueous

Milan Metro M4 line Project

Bucarest M5 line Project

Catania Metro line Project

Caltanissetta highway tunnel

Palermo railway node Project

S. Lucia tunnel (Barberino del Mugello)

Rome Metro C line Project

solutions. Proceedings of the World Tunnel Congress 2019 - Tunnels and Underground Cities: Engineering and Innovation meet Archaeology, Architecture and Art. Naples, Italy.

14. Guida, G., Sebastiani, D., Casini, F., & Miliziano, S. (2019). Grain morphology and strength-dilatancy of sands. Géotechnique Letters, 1-19.
15. Sebastiani, D., Vilardi, G., Bavasso, I., Di Palma, L. and Miliziano, S., 2019. Classification of foam and foaming products for EPB mechanized tunnelling based on half-life time. Tunnelling and Underground Space Technology, 92, p.103044.
16. Sebastiani, D., de Lillis, A., Di Giulio, A. and Miliziano, S., 2019, July. Effects of Thickeners Polymers Used in Tunnelling on the Physical and Mechanical Properties of Fine-Grained Soils. In National Conference of the Researchers of Geotechnical Engineering (pp. 678-685). Springer, Cham.
17. Ramezanshirazi, M., Sebastiani, D. and Miliziano, S., 2019, July. Artificial Intelligence to Predict Maximum Surface Settlements Induced by Mechanized Tunnelling. In National Conference of the Researchers of Geotechnical Engineering (pp. 490-499). Springer, Cham.
18. Sebastiani, D., Miliziano, S., Vilardi, G., Bavasso, I., Di Palma, L., & Di Giulio, A. (2019). Chemical interaction between fine-grained soil and foaming agents in tunnelling with TBM-EPB. Proceedings of the XVII European Conference on Soil Mechanics and Geotechnical Engineering – "Geotechnical Engineering, foundation of the future". Reykjavik, Iceland.

Didactic activities

Diego supported the didactic activities in the Dept. of structural and Geotechnical engineering of Sapienza, University of Rome in the geotechnical laboratory for the courses of Advances Soil Mechanics (Master's Degree in Civil Engineering) from 2016 to date and of the Course of Fundamentals of Geotechnics (Bachelor Degree in Engineering for the Environment and the Territory) of prof. ing. Salvatore Miliziano from 2018 to date.

Diego is Lecturer on the II level Master in Geotechnical Design of Sapienza, University of Rome.

Diego is the correlator of the Thesis of several students between Bachelor and Master Degree.

Roma, 01/01/2020