Excavation with TBM is not only one of the most flexible solutions for mining when it comes to rapid tunneling needs, but it is also flexible enough to be more and more adopted in urban contexts, particularly in those cities that need to reduce the impact of the construction on the existing structures. As per urban areas, the increasing use of the underground space and the sky-rocketing value of the land, together with growing needs of the citizens, are pushing the new infrastructures to be developed in ground conditions which are more and more challenging, including swelling rock, plastic clays, and fault zones. You’ll learn about different types of underground excavation support system and construction methods adopted for rapid tunneling; design tools to estimate ground movements and surface settlements in order to allow for proper building risk assessment; and specifically review a few case histories from global underground projects for subway systems, focusing on crucial problems to be solved during mechanized tunneling in an urban context. The lecture will also focus on the problems related to launching and receiving a TBM, which are the riskiest situations in mechanized tunneling, such as: controlling the groundwater during entrance/exit of the TBM, cutting of the diaphragm walls and global stability of the underground box, handling of the machine inside the station, and re-launching of the TBM. Leave this lecture with a tool-box to predict the known and unknowns of similar projects and to inspire all players in rapid tunneling to develop appropriate risk management strategies.

Giuseppe Gaspari is the Canada Tunneling and Underground Space Leader for Canada at AECOM with experience on signature global projects. He has been presented with prestigious local and international awards, he holds licenses in Italy and Ontario, a Degree in Civil Engineering, a Master in Geotechnics, a second level Master in Tunneling & TBMs and an MBA from the executive Kellogg-Schulich global business program. His North American experiences include the technical leadership of the Ontario Line (Toronto Relief Line) Tunnels preliminary design for Metrolinx, TTC and of the West Vaughan Sewage Servicing Project final design, a 14-km EPB-TBM tunnel with 9 shafts in the Greater Toronto Area (ON, Canada). His involvement included both transit and water projects.

Feb. 26th, 12-1 PM – BERTHOUD HALL 243
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