

Boğaziçi Math Seminar

Economic Growth versus Nature Protection: A Real Options Approach

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Abstract:

We incorporate climate change, biodiversity loss, and economic growth in a real options model, where we assess how to mitigate climate and biodiversity risks at the global level. In our model, we mimic a global policy maker, who has the option to limit the greenhouse gasses emissions and invest in nature conservation and other environmental interventions. Given the complex interactions between climate, biodiversity and economic processes, our goal is to find the optimal policy design for long-term sustainable development that balances improving economic welfare, conservation and restoration of nature. We use techniques from stochastic processes and optimal stopping to approach the decisions of the policy maker and develop numerical approaches. Hence, we contribute to the field of sustainable finance by adopting an interdisciplinary perspective and addressing the complex issue of mitigation with a real options approach.

This is a joint work with Marc Chesney, Delia Coculescu and Maria Santos.

Date : Wednesday, October 8, 2025

Time: 13:30

Place: TB 130, Boğaziçi University