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**Title:** “Optimal Timing in Environmental Policy under of Optimal Carbon Capture”

**Abstract**

In recent years, global environmental concerns have intensified, emphasizing the urgent necessity for international agreements addressing the reduction of greenhouse gas emissions (GHG) and to mitigate their potential consequences. While recognizing the presence of uncertainty surrounding future environmental outcomes and the associated costs, environmental policy decisions also involve considerations of irreversibilities, including sunk costs and benefits tied to environmental preservation. As environmental policies require substantial investments to curtail pollutant emissions, they inherently necessitate an in-depth analysis of optimal timing to maximize the cost-benefit.

This paper explores an environmental combined optimal timing and control model in order to provide a more comprehensive representation of environmental policy decisions. By incorporating the key factor of optimal carbon capture and storage, the research gives insight on the right moment to implement emission reduction under this situation. Joint work with Yuri F. Saporito (FGV EMAp).