



A SERIES OF VOICES SHAPING SUSTAINABLE CHANGE

# Meet the STEP-CHANGErs

***Davide Stucchi:*** **An Integrated Modeling Framework to Guide Performance-Based Urban Forestry Under Climate Stress**
Urban trees are essential for climate-resilient cities, yet their functional value is often simplified in planning. Current ecosystem service assessments frequently evaluate vegetation without integrating the physiological stressors produced by the urban environment. This research develops a mechanistic, individual-based modeling framework to bridge the gap between biological growth and service provision. By coupling decadal growth with high-frequency hydrological dynamics, the approach captures physiological responses to climate forcing. The findings advocate for a shift toward performance-based planning, emphasizing the preservation of mature assets and site-specific conditions for resilient ecosystem accounting.

***Jacopo Ghirri:*** **Climate Policy under Fear of Model Misspecification**
This research investigates how concerns about the adequacy of climate-economy models affect optimal climate policy design. Building on recent advances in decision theory, the study develops an applied framework that distinguishes three layers of uncertainty: risk within models, ambiguity across models, and misspecification of the models themselves. The framework is calibrated to IPCC-reviewed scenarios from five integrated assessment models and two damage function paradigms. Results show that accounting for model misspecification leads to more stringent carbon budgets and reduced emission overshoots, reinforcing the case for precautionary climate strategies under deep uncertainty.

The event will be followed by a networking aperitif.

**12th March 2026**
**5:00 - 6:00 pm**
**Alpha Room, Building 24, Campus Leonardo**

**Register here**

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www.phd-stepchange.polimi.it