Considering Uncertainty in Forest Planning

Online Ph.D. Course (4.5 ECTS) – February 28th, 2023 to March 31st, 2023

Module I: Adaptive Forest Management (AFM)

Dr. Rasoul Yousefpour

- Basic concepts and simulation of AFM strategies
- Bayesian decision analysis
- Value of Information

Module II: Monte Carlo simulation (MCS)

Dr. Kyle Eyvindson

- Stand-level MCS (one variable vs. multiple)
- Landscape-level MCS (one variable)
- Landscape-level MCS (multivariate sampling)
- Sobol analysis

Module III: Stochastic Dynamic Programming

Dr. Jose Borges

- Basic concepts on Dynamic Programming
- Stand-level Stochastic Dynamic Programming

Module IV: Stochastic Programming (SP)

Dr. Kyle Eyvindson

Dr. Irene de Pellegrin Llorente

- Basic concepts on SP with recourse
- Two-stage SP with recourse: general formulation and forest planning examples
- Multi-stage SP with recourse
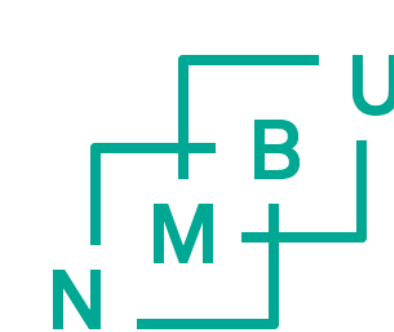- Scenario generation

Module V: Robust Optimization (RO)

Dr. Cristian Palma

- Basic concepts: uncertainty set and protection function
- Differences between RO models
- Bertsimas and Sim's model applied to forest planning

ARE YOU INTERESTED?

Contact irene.de.pellegrin.llorente@slu.se

SLU Forest Damage Center

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