

1023-90-1174

Natali Hritonenko (nahritonenko@pvamu.edu), Department of Mathematics, Prairie View A&M University, PO Box 519, Prairie View, TX , and **Yuri Yatsenko*** (yyatsenko@hbu.edu), Houston Baptist University, Houston, TX. *Discrete OR and continuous vintage capital models.*

The talk explores connections between discrete and continuous models and their application to two relevant areas of Operations Research and economic growth theory, optimal asset replacement models and vintage capital models. The authors analyze the following links: from deterioration in stationary environment to technological change, from constant to variable capital lifetime, from single-machine replacement problem to multi-machine replacement, from discrete integer-valued optimization to optimal control problems, from the problem of a firm to the optimal capital accumulation, from infinite-horizon optimization to finite forecast and rolling horizons, from Leontieff to multi-factor production functions with energy and resource factors, from one sector to two sector vintage models, from linear to nonlinear utility, from continuous technological change to technological breakthroughs.

The comparative analysis is beneficial for both research areas and helps to answer some open questions. (Received September 26, 2006)