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**Yuri Yatsenko** (yyatsenko@hbu.edu), 7502 Fondren, Houston, TX 77074. *Time-and-age distributed controls in economic and management applications.*

The talk surveys recent developments in the optimal capital replacement under technical progress and provides a qualitative analysis of arising integral and differential models with two-dimensional time-and-age distributed controls. The major applied technique for such models is the balanced growth analysis, which mathematically means finding steady-state (time-independent) solutions of these models. The authors obtain and analyze an exact analytic steady-state solution for the optimal control of an economy with the limited substitution among capital assets of various ages. This analysis leads to new results in the optimal control and new policy implications on when and how much the firms should optimally invest into capital assets of different ages. (Received September 11, 2011)