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Yuri Yatsenko* (yyatsenko@hbu.edu), TX, **Natali Hritonenko** (nahritonenko@pvamu.edu), TX, and **Selkhan Boranbayev**, , Kazakhstan. *Modeling of technological renovation under environmental uncertainty and resource scarcity.*

Industrial production consumes enormous amounts of natural resources, which leads to the resource shortage and possible exhaustion. In addition, industrial emissions are among major contributors to environmental contamination. Technological renovation, or replacement of obsolete but still workable equipment with the newer and ecologically friendlier vintages, can greatly reduce the environmental damage. The challenge is that, in a general case, the rational equipment lifetime appears to be different for sequential replacement cycles and depends on future cost dynamics. The talk surveys recent developments in the optimal replacement of productive assets under stochastic evolving costs defined by external technological, economic and environmental factors, including resource scarcity. Two alternative techniques, the infinite-horizon cost minimization and the stopping problem of real options theory, will be compared. Results of numeric experiments and managerial implications of the obtained outcomes are discussed. (Received September 17, 2017)