Optimal dynamic control of the forest resource with changing energy demand functions and valuation of CO2 storage

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Abstract:

A continuous time optimal control model has been developed. The model optimizes the dynamic utilization of forest resources under the influence of changing energy demand functions and valuation of CO2 storage. The model results are explicit functions that determine the optimal solutions.

The parameters, that have to be specified by the user, determine:

- The dynamically changing CO2 valuation function.
- The dynamically changing cost and revenue functions.
- The forest growth function.
- The initial and terminal forest conditions.
- The capital market.

The optimal control model may be used in any region or country with area specific parameter values.

Typical results from a specified region, Sweden, are given as an illustration.

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