Non-intrusive Parameter Identification of Transport Processes

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Abstract

In many fields it is advantageous to analyze the construction or material sample without intervening into the structure itself. This contribution presents such numerical procedure relying solely on data gathered on boundary. Our interest is focused towards building materials and their properties when exposed to coupled heat and moisture transport. As a material model, we introduce Künzel's transport model for its relative simplicity and sufficient accuracy to describe the underlying physical phenomena of coupled transport processes. The material model parameters are identified from the real climatic boundary conditions considering variety of domain shapes and parameter settings.

References

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