Aalto University

Dissertation press release 30.04.2020

Mathematical aspects of doubly nonlinear diffusion

Title of the dissertation	Doubly nonlinear parabolic equations Dubbelt ickelinjära paraboliska ekvationer
Contents of the dissertation	The subject of the thesis is doubly nonlinear diffusion equations. There is a special focus on a type of equations which can be used to describe flood phenomena as well as glacier dynamics. These equations can be viewed as generalizations of the classical heat equation. In the thesis the existence of solutions is demonstrated, and it is shown that solutions possess properties which make them physically relevant. In its general form, the equation contains a given function accounting for topographical effects. In this case there are no previous results regarding existence and properties of solutions.
Field of the dissertation	Mathematics, partial differential equations
Doctoral candidate	Matias Vestberg, M.Sc.
Time of the defence	15.05.2020 at 12:00
Place of the defence	Remote defence held at https://aalto.zoom.us/j/66291986278
Opponent	Professor Ugo Gianazza, Università di Pavia, Italy.
Custos	Professor Juha Kinnunen, Aalto University School of Science, Department of Mathematics and Systems Analysis
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