

ABSTRACT

Bachelor thesis: 50 p., 1 appendix, 7 sources

SOBOLEV SPACES, NON-INVARIANT MEASURE, FUNCTIONAL ANALYSIS, MEASURE THEORY

In this bachelor thesis a number of theorems were proved with following the assumptions regarding measure: μ - non-invariant measure, absolutely continuous with respect to Lebesgue measure, with continuous non-negative Radon-Nikodym derivative

Theorem. A function that belongs to $H^1(Q, \mu)$ also belongs to $\dot{H}^1(Q, \mu)$ if and only if it has a boundary trace equal to zero.

Theorem. Bounded set in $H^1(Q, \mu)$ is compact in $L_2(Q, \mu)$.

Also a number of preliminary theorems necessary for the aforementioned results to hold were proven and all required classic proofs were analysed in order to be generalised.